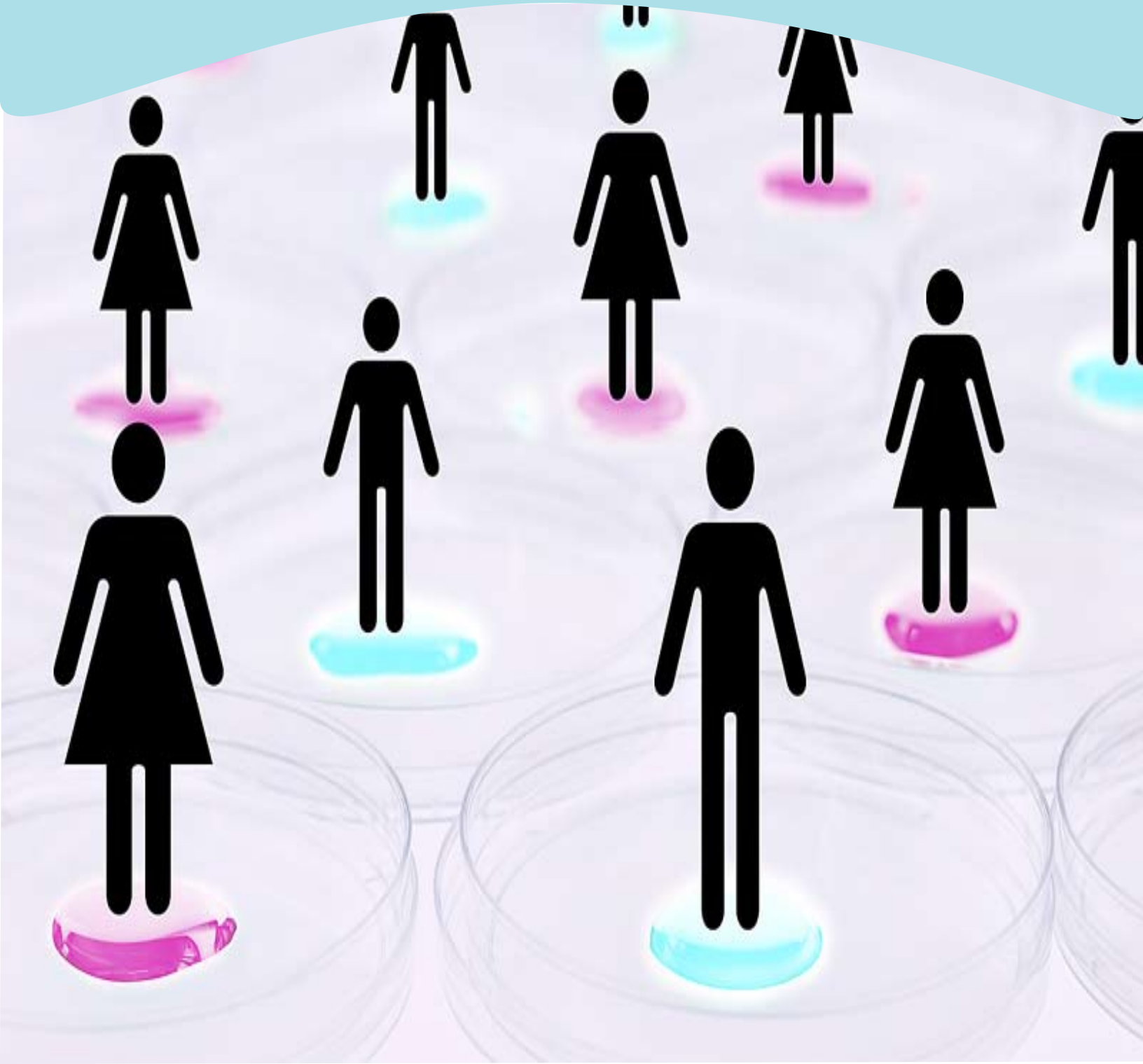
CANCER PREVENTION:

THE CASE FOR A CANADIAN CANCER COHORT



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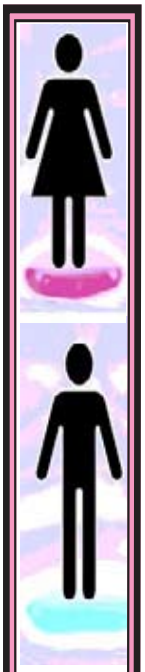
EXECUTIVE SUMMARY

Prospective cohort studies, in which large groups of individuals are followed over long periods of time, are usually designed to identify environmental, lifestyle and socio-economic factors that predispose to human diseases. More recent uses of cohorts include the exploration of the interactions between environmental and genetic factors and their relationship to the development of chronic diseases. The identification of risk factors can subsequently form the basis for interventions aimed at preventing diseases. For cancer, prevention is an important goal. There are already examples where a causal relationship is well-established, such as smoking and lung cancer, of effective public health strategies that have successfully reduced disease burden in certain populations.

Many countries are engaged in large prospective population cohort studies to elucidate the link between cancer and a number of potential risk factors. In Canada, several provinces are already working on the development or implementation of smaller cohort studies to determine the associations between known risk factors, potential biomarkers and the development of cancer and other chronic diseases. If we are to take advantage of early existing and planned efforts and expand them to create a national population cohort that includes all Canadian regions, we must act now as such a strategic opportunity is unlikely to present itself again in the near future.

The creation of a Canadian cohort would provide a laboratory for population, basic and translational research studies to address uniquely Canadian research questions in a Canadian context. It would also create a resource and legacy for future generations of Canadian researchers that would continue to yield valuable information for decades to come. In addition, a Canadian cohort could be designed and continually updated to incorporate cutting-edge research technologies, to facilitate molecular and proteomic studies in the future. Inclusion of a module to assess environmental exposures over many years would be an added bonus as most existing cohorts do not fully address this issue.



The proposed cohort would yield not only long term outcomes but also valuable information in the short term, such as:

- *population prevalence of known genetic variants and environmental exposures and association with traits and conditions present at the baseline;*
- *an improved understanding of general trends in cancer-related prevention and screening behaviours;*
- *an opportunity for the evaluation of "natural policy experiments" that might occur over its longitudinal course; and*
- *an opportunity for comparison studies by basic scientists engaged in the development of screening and early diagnosis markers.*

In the longer term, cohort studies would provide insight on the major interactions between genetic and environmental risk factors and the impact of different environments (physical, genetic, social and cultural) on predisposition to disease. A large cohort population would also be ideal for studies looking for biomarkers that represent early indicators of disease. As a spin-off of designing and managing a large population cohort we would develop improved methodologies for the collection of phenotypic and environmental data and for subsequent data mining and statistical analysis.

Experts agree that in order to see sufficient cases of cancer or other chronic disease within a reasonable time frame, an ideal cohort needs to be comprised of 250,000-300,000 subjects between the ages of 35 and 69. The estimated set-up cost for such a cohort would be $67-75 million over an initial five-year recruitment period, with ongoing costs of $3-4 million per year. Given existing investments in Alberta and Ontario, additional funding of $8-9 million per year for five years would be required to establish a Canadian cancer/chronic disease cohort of 300,000 participants, provided Ontario meets its target of recruiting 100,000 subjects. It is anticipated that the additional funding would support feasibility studies and pilot projects in provinces committed to the idea of a cohort but lacking the necessary financial resources to start or expand their own projects. Funds would also be used to help enhance and harmonize existing and planned cohorts to form a strong, unified base on which to build a Canadian confederation of cohorts and create a unique resource for cancer prevention studies.

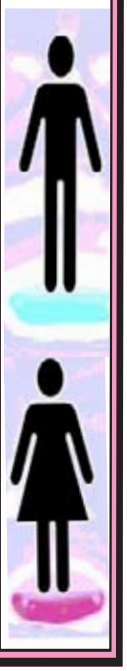
THE CASE FOR A CANCER COHORT

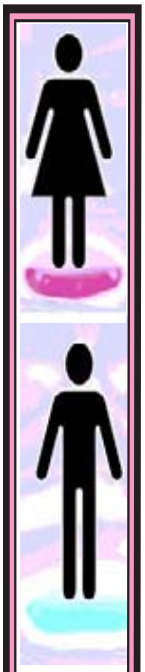
Cancer Control – Are we making progress?

Everyone fears a diagnosis of cancer. This fear encompasses the uncertainties that lie ahead, a dread of the traditional treatment options of surgery, chemotherapy and radiotherapy and ultimately the fear of leaving loved ones, perhaps following a slow and painful death. The good news is that after decades of investment in research, we are finally seeing improvements in cancer control. Advances in molecular medicine and imaging technologies have improved our ability to diagnose tumours early when they are usually the most treatable; to monitor disease progression closely to detect and potentially treat recurrences as early as possible; and to take advantage of a whole new generation of targeted therapies, including drugs that offer greater specificity and fewer harmful side effects. In the event of treatment failure we are becoming better able to offer effective and timely palliative care to ease transitions at the end of life for cancer patients and their families.

Can We Do More?

The combination of sustained investment in cancer research and dramatic advances in our understanding of the genetic, molecular and cellular basis of cancer is providing many exciting opportunities for improved cancer control. Through increased support for translational research it is anticipated that these advances will rapidly be applied in the clinic and in improved planning and delivery of patient care. However, despite the progress in cancer detection and treatment, the Holy Grail in cancer control remains prevention. In the same way that many of the deadly diseases caused by infectious agents have been eradicated through improved public health and immunization, an effective prevention strategy is sought for cancer. Few disagree that preventing cancer in the first place is the desired goal. However to prevent a disease it is generally necessary to identify the cause and for a majority of cancers the cause is either unknown or controversial. What we do know is that cancer is caused by a combination of an individual's genetic predisposition and their exposure to certain environmental risk factors. In cases where the environmental factor is





known e.g. use of tobacco products, public health interventions and education programs are succeeding in reducing the level of smoking and hence the incidence of lung cancer. It is estimated that the complete removal of tobacco products from the environment would reduce overall cancer incidence by as much as 30%. We also know that certain cancers are caused by exposure to radiation, e.g. skin cancer and UV exposure, or to exposures to specific chemicals or infectious agents. Similar associations have been described for diet, alcohol consumption and body weight although the evidence here is more controversial. In order to have impact on cancer prevention we need a clear understanding of the causative risk factors involved and the interplay between these factors and our genetic makeup.

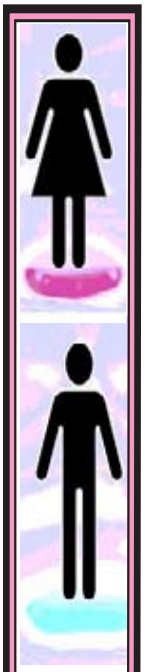
How do we Identify the Risk Factors for Cancer?

One way to identify cancer risk factors is through retrospective case control studies in which a group of cancer patients are compared to a matched group of non-cancer patients. Subjects may be asked to fill in a detailed questionnaire about their lifestyle, environmental exposures, diet, socio-economic status, medical history, etc. and also to provide blood or tissue samples for further detailed analysis. One disadvantage with case control studies, however, is that they are retrospective and rely on the capacity of study participants to accurately remember and recount past exposures or activities.

A more accurate way to establish associations and risk factors based on rigorous and unbiased information is through a prospective cohort study in which participants are recruited when healthy and followed, sometimes for several decades and through several generations, to determine associations between any number of factors (genetic and environmental) and the eventual development of disease. Prospective cohort studies are invaluable for understanding gene-environment interactions in complex human diseases and provide comparable controls from within the same population. They also offer the advantage of being able to assess conditions that do not lend themselves to a retrospective study, such as rapidly fatal conditions (e.g. heart attack), or dementia. Like a good wine, prospective cohort studies improve with age. As repeat questionnaires and biological samples are collected from the same people at regular intervals over many years a complete picture emerges of an individual's health status and exposure data over time. As new technologies, methods and information become available, additional layers can be added to the survey. Eventually a valuable resource is created that can be mined by both current and future researchers. Table 1 gives a few selected examples of some of the better-known cohorts, illustrating the broad range and design of such studies.

Table 1 - Historical Overview of Some Important Cohort Studies

Framingham Heart Study - *designed in 1948 to identify common factors that contribute to cardiovascular disease. Phase 1 began with the recruitment of 5,209 men and women aged 30 to 62 from Framingham, Massachusetts and included extensive physical examinations and lifestyle interviews that have been repeated every two years. In 1971 the study enrolled the second generation (5,124) of the original's adult children and spouses, followed in 2002 by enrolment of the third generation (3,900) grandchildren. New research questions and diagnostic technologies are continually added to the study.*
British Doctors Study - *designed in 1951 to investigate the link between lung cancer and smoking. In the UK, 34,439 registered physicians were recruited by questionnaire and followed with repeat questionnaires in 1957, 1966, 1971, 1978, 1991 and 2001.*
Nurses Health Study - *designed in 1976 to asses risk factors for cancer and cardio-vascular disease in women. The study has followed more than 120,000 female registered nurses since it began. In recent years additional assessments such as diet, aspirin use and colon examinations have been added to the study.*
The Nun Study - *designed in 1986 to determine what factors in early, mid and late life increase the risk of Alzheimer's and other brain diseases such as stroke and other quality of life questions. The study has recruited 678 American Roman Catholic sisters aged between 75 and 103 years. The study includes annual assessments of cognitive and physical function, medical exams, blood samples, and brain donation at death for neuropathologic studies. In addition, convent archives provide accurate risk factor data from early and mid-life.*
European Prospective Investigation into Cancer and Nutrition (EPIC) – *designed and coordinated by the International Agency for Research on Cancer (IARC) with financial support from the European Commission. This study which recruited over 500,000 individuals over 20 years of age from ten European countries between 1992 and 1999, continues to investigate the relationships between diet, nutritional status, lifestyle, and environmental factors and the incidence of cancer and other chronic diseases. The study includes questionnaires, anthropometric measurements and blood samples and follow-up is planned for at least ten years.*
Black Women's Health Study – *designed in 1995 to investigate the increased incidence of breast cancer, lupus, premature birth, hypertension, colon cancer, diabetes etc. in American black women. Study began with completed questionnaires received from 59,000 black women. Questionnaires are updated and revised every two years*.
Women's Health Initiative – *designed to study risk factors for heart disease, breast cancer, colorectal cancer and osteoporosis in postmenopausal women. The study includes a randomized clinical trial, an observational study and a community prevention study. By 1998, 93,676 women had been recruited to the observational study and will be followed for 8-12 years*.



Many of the cohorts listed in *Table 1* have yielded important information about disease causation and have cast light on the complex interplay of the different factors involved in human disease. For example the *Framingham Heart Study* has provided much of the current information on the risk factors for cardiovascular disease despite its relatively small size; the *British Doctors Study* was the definitive study which proved that smoking caused lung cancer; and the *Women's Health Initiative* and *Nurses Health Study* have provided valuable information on women's health including the role hormones and hormone supplements play in cancer and cardiovascular disease.

Are New Cohorts Being Planned Internationally?

As the value of prospective cohort studies is realized, a strategic need has been recognized to establish large blood and tissue-based prospective epidemiology studies in a range of settings with prolonged and detailed follow-up of cause-specific morbidity and mortality. Examples include:

- *The UK Biobank, which has recently been funded by the Wellcome Trust and the UK MRC, has started enrolling at least 500,000 individuals in the 40-69 age range. The purpose of the study is to identify and evaluate risk factors and the interactions between environmental and genetic factors for diseases such as cancer, heart disease, stroke, diabetes and dementia. This study will be linked to records kept by the National Health Service which keeps detailed health records of all UK residents from birth to death. The project will include extensive baseline questionnaires and physical measures as well as stored blood and urine samples.*

- *In the US, approval is pending for a large, 500,000 population cohort to determine the relationships between genes, environment and health in response to the recognition that environmental change interacting with genetic predisposition has produced most of the recent epidemics of chronic disease.*

Large scale cohort projects are also underway, or under discussion, in many other countries including China, Taiwan, Japan, Iceland and Germany.

Why Does Canada Need a Cancer Cohort?

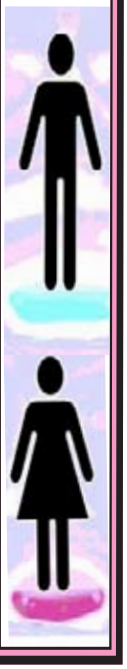
Given the considerable international activity in the area, the first question might be, "why does Canada need a cancer cohort?" and "how different

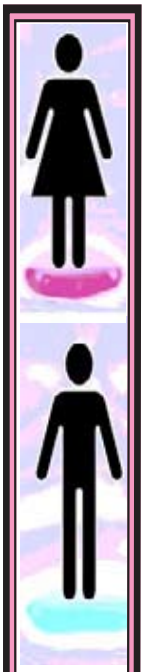
are Canadians from other populations?" While it is true that there will be many similarities between different cohorts and the information that they yield, there are important differences between countries with respect to the incidence of many cancers and even among different regions within countries, including Canada. Environmental factors vary dramatically around the world including differences in climate, health care, diet, occupational exposures and other environmental risk factors. Although it is likely that some extrapolation of results will be possible between cohorts and valuable insights might be learned from the studies in other countries, Canada needs its own population based prospective cohort which will give Canadian researchers access to data and biological samples and provide the opportunity to study Canadian minority groups that bear disproportionate burdens of disease. A Canadian cohort will:

- *enable us to address uniquely Canadian research questions in a Canadian context;*
- *encourage a strong and robust population research community;*
- *provide a population "laboratory" or "research platform" that would facilitate studies by population, basic and translational researchers; and*
- *create a resource and legacy for future generations of Canadians that will continue to yield valuable information and potentially provide answers to questions that we haven't even thought of as yet.*

In addition, few existing cohort studies have the infrastructure or size to address certain new and innovative approaches, such as:

- *serial collections of blood and other biological samples from the same people over time that would allow prospective monitoring of exposures that cannot be captured easily by questionnaire and would facilitate research into early detection markers;*
- *fresh tissue collection at the time of diagnosis or treatment to enable the precise molecular characterization of disease;*
- *proteomic technologies to identify and characterize the protein signatures of cancer cells for screening, and definition of homogeneous disease subsets; and*
- *a new Canadian cancer cohort would be designed to be flexible and capable of addressing the cutting edge questions of today as well as those in the future.*





What Are the Challenges Related to Cohort Studies?

One of the reasons Canada does not already have a large national population cohort is the sizeable initial financial investment required for initial recruitment and sample collection and the sustained cost of maintaining the data and sample resources over several decades. With our small population relative to countries such as the US and the UK and our large geographic area, coordination and logistics presented significant challenges in the past. Also given that the responsibility for health care lies with the Provinces, a national cohort requires collaboration and partnership between provinces as well as financial commitment. For many, although not all, questions it also takes a relatively long time to obtain meaningful results from cohort studies as we are essentially "waiting for people to get sick." This challenge can be overcome to some extent by enrolling subjects in mid-life, particularly when monitoring a disease such as cancer, which is predominantly a disease of older people. This approach has inherent disadvantages though, as many of the exposures that ultimately lead to cancer occur early in life and may not be captured in a retrospective questionnaire. As was done in the Framingham study however, second generation (children) and even third generation (grandchildren) of recruits can be enrolled as the cohort ages adding an additional depth to the studies that are possible. A further challenge is the tracking of the cohort group over perhaps decades for repeat evaluations and sample collection. This is somewhat easier to do with an adult cohort than, for example, a birth cohort but nevertheless requires time and commitment both from the study participants and the cohort study teams.

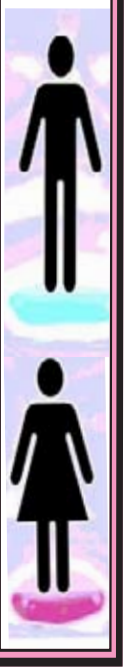
Are Canadian Cohort Studies Already Being Planned or in Progress?

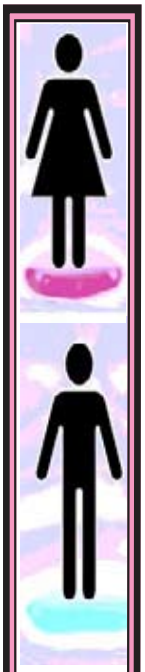
Canadian researchers have recognized for some time the value of prospective population cohorts as a means to identify factors that impact on human disease and quality of life. The idea of a birth cohort, aging cohort and chronic disease cohort has been discussed by many groups and organizations for several years. Although the difficulty in obtaining sustainable funding has impeded progress for these national initiatives, the Canadian Longitudinal Study on Aging (CLSA) is the furthest ahead in terms of development. CLSA is intended to be a large, national, long-term study that will examine health patterns and trends and identify ways to reduce disability and suffering among aging Canadians. The CLSA research team includes experts from across Canada in biomedical and clinical research, social sciences, psychology, health services and population health. It is anticipated

that after many years of developmental work the CLSA will finally get underway, in 2008. Although the goals and design of this cohort are not highly compatible with a cancer or chronic disease study, hopefully links can be established between this cohort study and the proposed cancer cohort. The following Canadian cancer cohorts are currently in progress or under development:

- *The most advanced cancer cohort is the provincially financed Alberta cohort (the Tomorrow Project), which was originally designed to be both a vehicle for the identification of risk factors for cancer and to provide a laboratory for population health studies. Recruitment is by random-digit dialling of individuals in the 35-69 age range, with no previous history of cancer. It is anticipated that 30,000 people will be enrolled into the cohort by December 2007 and will have completed baseline questionnaires concerning health, diet, physical activity, and various aspects related to behaviour and lifestyle. In addition, blood has been collected from about 1500 of the participants and samples have been fractionated into multiple aliquots of serum, plasma, red blood cells and buffy coat, prior to ultra-low temperature storage. Participants have also consented to linkage of study data with data held by the Alberta Cancer Registry and provincial health insurance data. Consent for linkage with other national databases will be sought at the next follow-up.*

- *The province of Ontario is in the early development stages of a planning process for a chronic disease cohort, following a workshop in June 2006. The organizing team has established working groups and hopes to have a protocol in place by next year, following a comprehensive literature review and recruitment of a Scientific Director. Some progress has been made in establishing links with the Ontario Institute of Cancer Research (OICR), The Tomorrow Project in Alberta and existing international cohorts. Ontario has expanded the scope of its cohort to include other chronic diseases such as cardiovascular disease, diabetes and obesity. OICR set aside $20 million in 2006 to work with Cancer Care Ontario (CCO) and other partners in establishing a large-scale population cohort of up to 100,000 individuals. The cohort is expected to have both short and long term outcomes and facilitate community-based interventions and evaluations that take advantage of ongoing natural experiments. Cancer Care Ontario hopes to use the cohort to steer the health system by establishing linkages with the cancer registries and primary care records to create benefits from innovation and advances in health services and the public health system. A*





second meeting is planned in June 2007 to review the reports provided by the working groups and plan the next steps.

- *B.C. is engaged in a small pilot project cohort within the B.C. mammography screening program, funded by the Canary Foundation and the Canadian Foundation for Innovation. Subjects will complete a questionnaire based on the one used in The Tomorrow Project in Alberta and will donate an initial blood sample followed by four subsequent annual donations which will be used for biomarker studies. There are also plans to monitor environmental toxins through linkage to the Population Health Learning Observatory, a health database housed at the University of British Columbia that goes back to 1985 and includes hospital discharge data, physician visits and pharmacological data. At present $110,000 is available for the development and design of a biomarker group and the recruitment of 100 women. B.C. is hoping to leverage their funding with other groups and obtain buy-in from other chronic disease communities e.g. cardiovascular. It is hoped that the results from this pilot study will encourage the Canary Foundation to increase its financial investment.*

- *Although not specifically a cancer cohort, CARTaGene, a publicly funded longitudinal population cohort based in Quebec, plans to enrol 20,000 individuals in the 40-69 age range during its first phase and further 30,000 from the 25-40 age range in the second phase. CARTaGene will focus on the genomic determinants of chronic diseases in the aging population and on public health by collecting and analyzing DNA, social, health and environmental information.*

How Many Subjects Are Needed for a Canadian Cancer Cohort?

Canadian and international population health researchers agree that in order to have sufficient impact, a Canadian cancer cohort needs to recruit a minimum of 250-300,000 subjects in the adult age range (35-69). A group of this size is required to yield sufficient cases of cancer and other chronic diseases for analysis within a reasonable time-frame. For example, estimates indicate that a cohort of 300,000 followed over a ten year period would yield over 600 lymphomas, over 1100 colorectal cancers and over 2000 breast cancer cases. In order to reach this target it will be necessary to expand existing and planned provincial cohorts and engage provinces currently not involved in cohort studies to create a “confederation of cohorts.” The window of

opportunity for doing this is right now, before those endeavours already underway become well established and consequently less flexible. The financial commitments already in place in the provinces of Alberta and Ontario, pave the way for the creation of a national cohort.

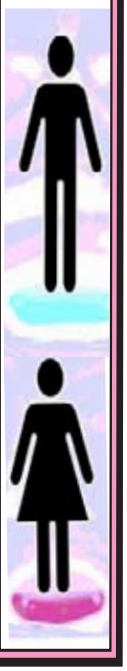
What Would a Canadian Cancer Cohort Cost?

The major cost of a cohort study is in the enrolment and sample collection at the outset. Estimates for the recruitment cost per subject vary widely due to several factors including:

- *methods of data collection (self- versus nurse-administered),*
- *inclusion of remote regions,*
- *collection frequency,*
- *type and intended use of samples collected,*
- *sets of variables, phenotypes and environmental exposures that are measured,*
- *degree of planned data analysis.*

Consensus among population health experts in Canada is that recruitment and baseline data collection from a 300,000 Canadian cohort over a five year period is likely to cost approximately $67-75 million, based on a projected cost of approximately $230 per subject. This cost includes enrolment of subjects, completion of a set of baseline questionnaires and collection of biologic samples, but does not include costs associated with analysis of samples or of data.

Following recruitment and procurement of biological samples, ongoing maintenance costs for the cohort are estimated to about $3-4 million annually, plus an additional $50 per enrolee every two or three years for additional data collection. Given that Ontario and Alberta have already committed almost $30 million collectively for recruitment into their cohorts, an additional $40 million (minimum) over five years (i.e., $8 million per year) is required to build a national cohort of 300,000 subjects, provided Ontario reaches its target of recruiting 100,000 subjects. If the study were to continue for more than ten years additional funds would be required to recruit a subcohort group to replace those lost to the cohort through death, withdrawal or other reasons.



What Does the Canadian Cancer Research Alliance (CCRA) Recommend?

The Research Action Group of the Canadian Strategy for Cancer Control (now the Canadian Partnership Against Cancer - CPAC), which in 2004 expanded to become the CCRA, has for more than three years been working to determine the most pressing research needs in cancer control. Through a process of broad consultation with researchers, health system and health services managers, and stakeholder groups including other CPAC Action Groups and cancer patients, CCRA has come to the conclusion that there are two essential and complementary approaches to cancer control – prevention and treatment. CCRA recognizes the importance of both a large-scale translational research initiative to expedite the uptake of advances in basic and clinical research into practice and policy and the creation of a cancer cohort to identify modifiable risk factors leading to prevention strategies. The case for translational research has been described in another document, "Cancer Control at a Crossroads: The Case for Translational Research" which can be obtained from the CIHR Institute of Cancer Research (ICR) and will soon to be available on the ICR website.

How Can We Build a Canadian Cancer Cohort?

CCRA recommends that a Canadian cancer cohort be created by building on existing and planned projects such as those in Alberta and Ontario to create a confederation. There are several successful models based on this kind of approach including:

- *The Canadian Tumour Repository Network (CTRNet) which was the result of a successful joint grant application to ICR by the Canadian Association of Provincial Cancer Agencies and five provincially funded tumour banks from British Columbia, Alberta, Ontario, Manitoba and Quebec. This network links existing tumour banks through a shared informatics infrastructure and has established national standards for tissue collection, dissection, preservation and storage. The network has also standardized databases containing pathology reports, patient medical history, treatment outcomes and molecular profiles.*

- *The Public Population Project in Genomics (P3G), an international consortium whose members are leading public organizations partaking in large-scale genetic epidemiological studies and biobanks. CARTaGene, is a founding member of P3G.*

- *The EPIC study (see Table 1), which includes ten European countries and has research scientists based in 23 centres located across Europe.*

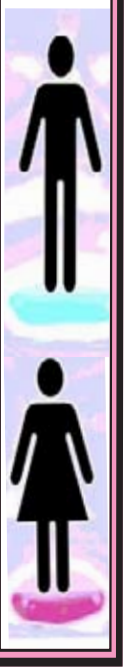
By supporting a confederation model between existing and proposes Canadian cohort programs, developing programs in other provinces and establishing links with international cohorts it should be possible to harmonize questionnaires and sample collection going forward and even calibrate for retrospective harmonization.

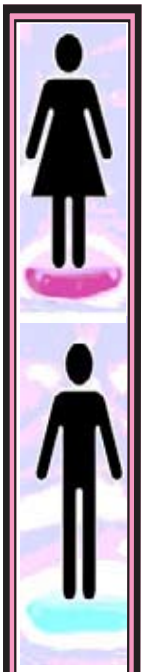
Why Would Support of a Cancer Cohort be a Good Investment for CPAC?

CPAC funding could be used to expand regional cohorts into a national study by supporting feasibility studies and pilot projects in provinces committed to the idea of a cancer cohort but lacking sufficient finances to start or to expand their own projects. A set of criteria will be established for membership in a confederation model with the possibility of review of proposals by a small international panel of experts who could also serve as advisors. Expansion and alignment of ongoing and proposed cohorts will provide the opportunity to address specific focus areas such as regional variations in cancer rates, behavioural factors, unequal burden of cancer among different populations (such as aboriginal communities), and the impact of social determinants and environmental factors across all regions of Canada. The ability to incorporate environmental measures in the survey would require collaborations with chemists, physicists and environmental modellers to decide what to measure and how to do it. The first step would be to create a task force (estimate $750,000 - $1million for task force support) to make recommendations on environmental and measurement issues. Environment Canada, Statistics Canada and Health Canada are already engaged in measurements of cancer rates and environmental toxins, including the one-time measurement of chemicals present in the blood of 5,000 Canadians, so partnership is definitely a possibility that will be explored.

A cancer cohort, as part of a larger chronic disease cohort, will be a big step towards developing intervention and prevention strategies. Short term outcomes from the cohort will include:

- *Population prevalence of known genetic variants and environmental exposures and association with traits and conditions present at the baseline.*





- *An improved understanding of general trends in cancer-related prevention and screening behaviours. Data available from the Alberta cohort has already resulted in a better understanding of colorectal screening, prostate screening, multivitamin/supplement use, and hormone replacement therapy trends in the province.*

- *An opportunity for the evaluation of "natural policy experiments" that might occur over its longitudinal course. If, for example, smoke-free public spaces were mandated in some communities and not others over the course of the study, a baseline group would already be in place with recorded smoking behaviours and other characteristics prior to the policy change. By using the rich data available to distinguish the characteristics of smokers who changed their behaviours from those who did not, we could provide excellent analysis of the predictors for success of such policies.*

- *An opportunity for comparison studies by basic scientists engaged in the development of screening and early diagnosis markers.*

In the longer term, a large cancer cohort, representative of the Canadian population, will be a uniquely rich resource for investigating why some people develop cancer and others do not and will serve as a resource for translational research, as some participants enter treatment cohorts. Other anticipated long term outcomes include:

- *an understanding of the major interactions between genetic and environmental risk factors;*

- *an understanding of the impact of different environments (physical, genetic, social and cultural) on predisposition to disease;*

- *identification of biomarkers that represent early indicators of disease;*

- *development of improved methodologies for the collection of phenotypic and environmental data; and*

- *development of improved methods of data mining and statistical analysis.*

Once an initial cohort is in place, the scope could be expanded to include other chronic diseases such as cardiovascular disease and diabetes, attracting additional partners and financial investment. The cohort

would in time become an increasingly valuable (and cost-effective) population health tool that could be made available to researchers with individual research questions through a process funded separately by existing granting agencies e.g. CIHR, NCIC. Investment in a cancer cohort would be an extremely strategic decision that takes advantage of what may be a fleeting, once in a lifetime opportunity. As individual provinces engage in cohort activities it will be come increasingly difficult to form linkages with standard practice and operating procedures. Now is the time to take advantage of the investment in Alberta, Ontario and to a lesser extent, BC to build a uniquely Canadian research platform and population health laboratory that will support innovative studies related to cancer prevention for many years to come. It is not clear how a national cancer cohort will be developed without CPAC investment and as such represents, for CPAC, an unprecedented opportunity for both short and long term impact on cancer control across Canada at the population level.