

CCHSE Fellowship

Special Project

Development of Community Health Indicators and a Community-Wide Physical Activity Strategy

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Table of Contents

Key Messages	I
Executive Summary	II
1. Intervention Project Report	1
1.1 Context	1
1.2 Problem Statement	1
1.3 Evidence Review	2
1.3.1 Sources	2
1.3.2 Assessment	4
1.3.3 Applications	11
1.4 Intervention Project Objectives, Model / Methods, & Strategies for Implementation	13
1.4.1 Objectives	13
1.4.2 Models and Methods	15
1.4.3 Implementation Plan	22
1.4.4 Results	24
2. Lessons Learned	26
2.1 Implementation of Change	26
3. Dissemination	30
4. Implications	30
4.1 For Decision Makers & Other Audiences	30
4.2 Future Activities	31
5. Conclusion	32
Appendix 1 - Indicator Worksheet	33
Appendix 2 - A Call to Action: A Community-Wide Physical Activity Strategy	34
Appendix 3 - Community Health Indicators – Survey Questionnaire & List of Indicators	111
Appendix 4 - Community Health Indicators - Survey Results	124
References	128

KEY MESSAGES

- Compared to other provinces Nova Scotia has poor health status, high rates of chronic disease, overweight and obesity, an aging population and significantly increasing provincial health care spending.
- Effective interventions to improve health status and impact chronic disease require multi-level, multi-sectoral actions.
- For the health system, this means going 'upstream' and moving from a focus solely on acute care to one that values the importance of a broad population health approach.
- For the district health authority, this means development of partnerships beyond the traditional healthcare sector and a systematic way to measure progress of population health strategies. It may mean district health authorities will have to reassess skill mix, decision support systems, budget allocations and advocacy priorities. It will also mean shifting organizational culture to include valuing a population approach to health.
- The first step in the successful implementation of a population health approach is the development of a set of evidence-informed community health indicators. These indicators should flag what contributes to good health within the local area. The second step is to use this information to guide decisions regarding priorities for action.
- Utilization of community health indicators in decision making at the governance level will likely be increased if the following conditions are present: 1) involvement of those who are to use the indicators in their development, 2) presentation of evidence linking indicator to health in a managerially useful format – easy to read, lay language, with a clear link between the research and its application to the management decision in question, 3) wide dissemination and organizational readiness.
- A key risk factor for developing chronic disease is obesity, now a growing public health concern and linked to lifestyle factors of food intake and activity levels.⁶¹
- Physical activity is an independent risk factor conferring significant protective health benefits that mitigate many types of chronic disease such as heart disease, stroke, hypertension, type two diabetes, cancer, osteoporosis, depression, anxiety and stress.⁶⁷ These are all significant health issues within Capital Health.
- Over half of Nova Scotians are inactive (50.8%) and only 24.8% meet the minimum activity levels for optimal health benefits. Activity levels for the Capital Health district are only slightly higher than the provincial rates, with 52.6% of HRM residents being active or moderately active.⁵¹
- Community based interventions to promote physical activity are central to a comprehensive strategy to increase physical activity behaviors in a population. This is because physical activity is linked to behavioral, social, physical and environmental correlates.⁶³
- Strong evidence exists to show that community wide campaigns are effective in increasing physical activity in the population.⁶¹
- Research indicates that the greatest impact on health improvement related to cardiovascular disease comes from moving the sedentary population to a moderate level of activity as opposed to moving already active individuals to an even higher level of physical activity.⁵
- Key in shifting organizational culture from an acute care focus to one that also values a population health approach is the ability to 'sell the idea' that this change will, in the long run, improve health. Effective use of the research evidence is a powerful tool in achieving this.

Executive Summary

Capital Health is the largest health district in Nova Scotia, providing care to an immediate catchment area of 400,000 (approximately 40% of the population of Nova Scotia). It serves as a provincial and maritime referral center for tertiary and quaternary care. Its mission includes care, education, research and advocacy aimed at improving the health of the community.

Capital Health monitors acute care through indicators such as surgical wait times, medication errors and infection rates. It does not have a systematic process for monitoring population health. Currently Capital Health does not systematically utilize a set of evidence informed community health indicators to guide its decision-making (strategic or business). Why is this important? Why is there a need for change?

Compared to other provinces, Nova Scotia has poor health status, an aging population and high rates of chronic disease and obesity. Conversely, Capital Health has lower than desired rates in preventive health areas such as mammography screening and physical activity²⁰.

There is also a fiscal imperative for change. The Halifax Chamber of Commerce's Health Monitor forecasts that by 2026 provincial healthcare spending will be 83% of all government revenues.³⁶ The Minister of Health Promotion and Protection commented, in an address to the Chamber's membership that, by his accounting, anticipated health care spending will use all government revenues by 2026 if current trends continue.³ Although it is unlikely that any government would let the situation deteriorate to this point the increasing rate of health care spending is cause for concern.

We have two choices. These are to continue to fund the supply side or to reduce the demand side of this equation. Given our fiscal inability to continue to fund supply, the reasonable approach is to increase our ability to control demand.³⁶ This means going upstream and understanding what contributes to good health. It also means measuring it. What we measure counts and what we measure and count reflect the values of our society and are ultimately what determines the agendas of our governments.⁴¹

If we do not provide the evidence of what constitutes good health, that is the data on community health indicators, to the boards of district health authorities then we cannot expect them to use this evidence to guide their decision-making.

The focus of this project is first, to develop a set of community health indicators to be utilized by Capital Health to guide decision-making. Second, it is to provide an example of how to improve the indicators using the indicator of physical inactivity as the example. Third, ascertain if the evidence- informed indicators were utilized to guide strategic and business decision-making.

To begin this work working groups were established to develop a set of evidence informed community health indicators and a process to track them. Indicators were derived from a literature review using criteria adapted from Saskatchewan Health covering the general population, as well as Infants/Children, Youth, Adult and over- 65 age groups. The list of indicators (Appendix 3) was then refined through consultation with stakeholders using a modified Delphi process. Health authority and community stakeholders were surveyed on the choice, knowledge and utility of the indicators. Changes in stakeholder knowledge and attitudes as a result of this project were assessed using Likert Scales from 1 to 5.

Results: 38 out of 59 responded (64%) to the indicator survey. The priority indicators chosen by the respondents for each group were as follows: GENERAL – percentage of low-income families (32%); INFANT/CHILDREN - percentage of mothers breast feeding on leaving hospital (25%); YOUTH - percentage with BMI>25 (33%); ADULT – percentage with BMI>25 (32%); OVER-65's–home care wait-times (37%). Respondents showed high scores for knowledge and attitudes on the Likert scales (medians of 4). Respondents indicated that the information and

discussion provided on the community health indicators had increased their awareness of the health status of the community and the link between the indicator and health. They also indicated that monitoring and reporting of these indicators to the Board would help guide the Board and organization in its strategic and business decision-making.

Initiating action to improve the indicators is important as monitoring of indicators alone will not improve health status. It is the implementation of effective interventions that will. Because the investment of time and resources for intervention implementation is great it is important to begin with an indicator for which there is evidence of significant health benefits as well as organizational support and readiness.

The indicator of physical inactivity was chosen as the focus for initial improvement efforts within Capital Health given its high rates⁵¹, its health implications and recognition that physical inactivity, along with poor nutrition is a major contributing factor to obesity– a growing public health concern in Nova Scotia and chosen by stakeholders as a top priority. There was also a readiness in both the internal and external environments to move forward to address physical inactivity (see section 1.3.3 Facilitators). In addition, although there is considerable evidence supporting the health benefits of physical activity there is little published evidence of Canadian communities that have increased physical activity levels within their population (Saskatoon being the exception⁶⁰). Therefore, it was identified that addressing this indicator will fill an important research gap.

Interventions to improve other indicators will be addressed as part of future business planning processes as resources become available. Evidence supporting these interventions will be researched at that time.

Major findings from this project, supported by the evidence review, include the following: there is no consensus on a single set of indicators that all communities should be measuring. There is, however, some direction regarding the process that one should follow to develop the indicators.^{16,29,37} Of particular importance is the consideration of the local context when selecting the indicators. Hancock et al, in an article *Indicators that Count*, observes that it is more important that indicators be useful to communities (in this case Capital Health) than developing a standard set of core indicators useful nationally as measures of comparison but with little relevance at the community level³⁷.

With regard to the development of the physical activity strategy, findings from the evidence revealed that there is strong evidence to support community-wide campaigns to increase physical activity at the population level. A multi-level, multi-sectoral approach is likely to be the most successful⁶³. This requires partners outside the traditional healthcare sector. Therefore, a partnership representing seven organizations (Halifax Regional Municipality, Halifax Regional School Board, Dalhousie University, Department of Community Health and Epidemiology, IWK Health Center, Nova Scotia Health Promotion and Protection, Nova Scotia Heart and Stroke Foundation, Capital Health) was formed to develop the strategy. Vision, goals, objectives and actions were developed. Actions were informed by the research evidence regarding effective interventions to increase population level physical activity, innovative practices in place elsewhere and the local context.

A key conclusion drawn from this project was that the use of community health indicators by decision-makers is increased by the following: 1) involvement of those who will use the indicators in their development 2) presentation of evidence linking indicator to health in a managerially useful format – lay language, with a clear link between the research and the management decision in question, 3) wide dissemination. In addition, there must be organizational readiness to take action to improve the indicators if one is to move forward with an effective intervention. This latter step is a critical success factor in implementing change.

In summary, the short term objectives of the intervention project (set of community health indicators, process to track them, a physical activity strategy) were all achieved within the time allocated for the project.

The medium term objective was also achieved within the time frame. Results revealed that the community health indicators and physical activity strategy were utilized at the governance and organizational levels of Capital Health to guide decision making. This was demonstrated by the increased allocation of resources (human, financial) to

population health initiatives, organizational restructuring of decision support services to support population health as well as acute care initiatives and changes in Board committee terms of reference to monitor and take action on community health indicators. Additional evidence was seen through the incorporation of community health indicators in Capital Health's new strategic plan.

Given the complexity and relatively long term nature of population health strategies, the achievement of the long-term objectives (improved health status and a decrease in the percent of inactive citizens within HRM) was not anticipated within the project's time line. The work to date has provided a baseline for measuring population health. To further advance this work ongoing surveillance of the indicators will be needed. Also required will be the identification and implementation of effective interventions to improve the indicators. It is only through sustained action over time that change will be seen in Nova Scotians' health status.

The key limiting factor in utilization of research evidence related to population health strategies is the competing forces of the acute care sector. Key in addressing this is to develop an understanding, throughout the organization, that the decision is not whether to resource acute care or population health but rather how to attain a balance in resourcing both.

An important lesson learned throughout the implementation of the intervention project was that effecting change requires one to "sell the idea". With the many competing demands being faced by healthcare executives today the benefits accruing from the change must be 'sold'- that is clearly articulated and relevant to current management decisions. This requires seeking first to understand before seeking understanding. There is no better substitute for doing this than one to one communication with key decision makers. It is commitment to the change (valuing a population health approach) not compliance that should be sought. Discussion of the research evidence (community health indicators) can be a powerful tool in helping achieve this.

This intervention project has provided quality indicators (first phase) to monitor system planning and performance related to population health improvement. These indicators, the process for determining them and the description of how one indicator was addressed may be helpful to other district health authorities as they work to meet their legislative mandate to improve the health of their communities.

1. INTERVENTION PROJECT REPORT

1.1. Context

Capital Health is the largest health district in Nova Scotia, providing care to an immediate catchment area of 400,000 (approximately 40% of the population of Nova Scotia). It serves as a provincial and maritime referral center for tertiary and quaternary care. Capital Health has a budget of approximately \$700 million, a staff of about 10,000 employees and physicians and is affiliated with Dalhousie University. Its mission includes care, education, research and advocacy aimed at improving the health of our community.

Capital Health is embarking on the development of a new strategic plan. One of the goals of its planning process is to ensure that its strategic directions are community based and evidence informed.

Compared to other provinces, Nova Scotia has poor health status. Nova Scotia has high rates of death from cancer and respiratory disease, high rates of diabetes, circulatory disease, obesity and hospitalizations for chronic diseases.²⁰ Conversely, Capital Health has lower than desired rates in preventive health areas such as mammography screening and physical activity. The Halifax Chamber of Commerce's Health Monitor forecasts that provincial healthcare spending will be 83% of all government revenues.³⁶ The Minister of Health Promotion and Protection commented in an address (October, 2007) to the Chamber's membership that anticipated health care spending will use all government revenues by 2026 if current trends continue.³ Although it is unlikely that any government would let the situation deteriorate to this point the increasing rate of health care spending is cause for concern. It means either decreased revenue for non health expenditures, such as education and transportation, or increased taxes to accommodate the increase in health care expenditures, or some combination.

We have two choices. These are to continue to fund the supply side or reduce the demand side of this equation. Given our fiscal inability to continue to fund supply the reasonable approach is to control demand.³⁶

In this regard, Capital Health has identified, as an organizational priority, the need to change the way we think about health care and move from an acute care focused healthcare system to one that also values the importance of a broad population health approach. Capital Health's Board of Directors has established a Population Health Committee of the Board, the mandate of which is to assist in this movement. Capital Health has also established a Chronic Disease Prevention and Management Committee. This Committee has noted the need to identify and utilize evidence-informed community health indicators to better inform our understanding of the health of our population. In addition, this group has identified obesity as a major public health concern for which population health interventions, such as a physical activity strategy, are required.

External to Capital Health, the Halifax Regional Municipality is implementing a new regional plan to guide the future development of the region ensuring a healthy vibrant community for its residents. The Halifax Regional School Board is embarking on strategies that foster healthy child and youth development. The IWK Health Centre, our child and maternal hospital, has recently established a primary health portfolio to focus on broad population health issues and the Nova Scotia government's recently established Department of Health Promotion and Prevention has established funding for various health prevention and promotion initiatives including physical activity initiatives. All of the above create opportunities and an environmental context that supports Capital Health's move toward a population health approach.

1.2. Problem Statement

Currently, Capital Health does not systematically utilize a set of evidence informed community health indicators to guide its decision making (strategic, business and program). Capital Health monitors, reports and takes action to improve many acute care processes based on a review of indicators such as wait times for hip and knee surgery, length of time spent in the emergency department, infection rates and medication errors. However, Capital Health does not have a systematic review process for monitoring and taking action to improve its population health processes and strategies.

One of the key decision making responsibilities of the Board is to set strategy. Strategy guides resource allocation both of which should be informed by evidence. If Capital Health is to successfully implement a population health approach, to address issues such as obesity and other chronic diseases, it will be important to link evidence of what works, in terms of population health improvement, with the activities that Capital Health undertakes.

According to the Public Health Agency of Canada a first step in addressing population health issues is to develop and track a set of evidence-informed community health indicators. This implies a set of indicators where there is evidence that links a change in the indicator with a change in health status (directionality). A second step is to implement interventions to improve the indicators. Likelihood for success is enhanced if the interventions chosen for implementation are also based on best available evidence. For example, epidemiological evidence indicates that chronic disease can be decreased by addressing modifiable risk factors like physical inactivity and strong evidence exists to show that community-wide campaigns are an effective intervention to increase physical activity in the population.

Capital Health has not identified or gained consensus regarding which community health indicators are relevant to its decision making regarding the district's legislated mandate to maintain and improve the health of its residents. The first phase of this intervention project proposes to address this void by developing, through a consensus based process, a set of evidence informed community health indicators to be utilized to guide the work of our district, its community health boards and its programs.

Given limited financial and human resources and the length of time and effort it takes to create change in population health indicators, a relatively short list of evidence informed community health indicators that are linked to improved long-term health outcomes was developed for surveillance. To initiate action to improve these indicators, a focus on increasing physical activity in the population was taken (the second phase of the intervention project). The indicator of physical inactivity was chosen as a focus for initial improvement efforts given its high rates, its health implications and recognition that physical inactivity, along with poor nutrition, is a major contributing factor to obesity – a growing public health concern in Nova Scotia and a key risk factor for chronic disease. Efforts are underway within Capital Health to address poor nutrition through the implementation of the provincial healthy eating strategy. Although there is some work being done to increase physical activity there is no provincial or district wide strategy to integrate existing initiatives. Following the development of an evidence-informed, community wide strategy to address this, approval from Capital Health for its implementation, in partnership with other organizations, was sought. Work carried out in the development of the community-wide strategy such as the literature review, logic model and the implementation plan was shared with other municipalities and may be helpful in the development of a provincial wide strategy.

In summary the aims of this project are:

To develop a set of evidence-informed community health indicators to be utilized by Capital Health to guide decision-making.

To provide an example of how to improve the indicators using the indicator of physical inactivity as the example.

To ascertain if the research evidence related to the community health indicators and in particular the physical inactivity indicator was utilized to guide strategic and business decision making.

1.3. Evidence Review

1.3.1. Sources

A literature search was carried out to obtain evidence to inform the intervention project. This entailed searching first for information related to community health indicators to measure population health. A second search was carried out to identify effective interventions to increase physical activity in the population. The latter search was carried out in relation to the organization's desire 'to initiate action' to improve community health indicators. Much of the literature regarding community health indicators included reference to physical activity as one of the measures of population

health that should be increased to improve health status. Selected articles on evidence-informed decision making, population health and determinants of health were also reviewed.

Key healthcare databases were searched including the Cochrane Library, Pub Med, CINAHL and the Campbell Collaboration. This was supplemented by hand searching. The grey literature was searched to identify information not published in key databases. Journals such as the American and Canadian Journals of Public Health, and the International Journal of Epidemiology were also searched. Evidence was collected from program and policy documents located primarily through provincial and federal governmental websites and also from selected international websites. Internal documentary evidence was also accessed.

Health indicators developed by the Canadian Institute for Health Information (CIHI) and the National Primary Care Indicator Group were reviewed as well as specific provincial, national and international indicator projects. Such projects included the Canadian Index of Well Being, Quality of Life Reporting System by the Federation of Canadian Municipalities, Genuine Progress Index-Atlantic and the New Zealand Public Health Indicators.

Personal contact was made with individuals in Nova Scotia, elsewhere in Canada and internationally that have expertise in the areas relevant to the development of community health indicators and physical activity interventions. Contact with the Director, Canadian Institute of Health Information (CIHI) and the Nova Scotia representative on the National Primary Care Indicator group were made to gain an understanding of the processes used by these organizations to identify indicators. The Director of a community based approach to increase physical activity in Saskatoon was invited to Halifax to speak to the model's proven efficacy.

Attendance at conferences, with national and international experts in the fields of population health, chronic disease, obesity and physical activity also provided valuable insight to the project. This offered opportunity for international experts in the field of physical activity to comment on components of our community-wide strategy, confirming our use of best available evidence.

MeSH headings used for the literature review were for physical activity: obesity, health promotion, exercise; limits were latest five years, English, human. For community health indicators a Freetext search was used using the phrases community health indicators, public health indicators. Selected articles were reviewed for evidence-informed decision-making.

Following a review of Capital Health's ethical guidelines (the 'check list') it was determined that this project fits under quality assurance activity.¹⁹

Analysis of the various sources of evidence led to the following observations to guide development of the intervention project. The information is provided in section 1.3.2 under the key headings identified below.

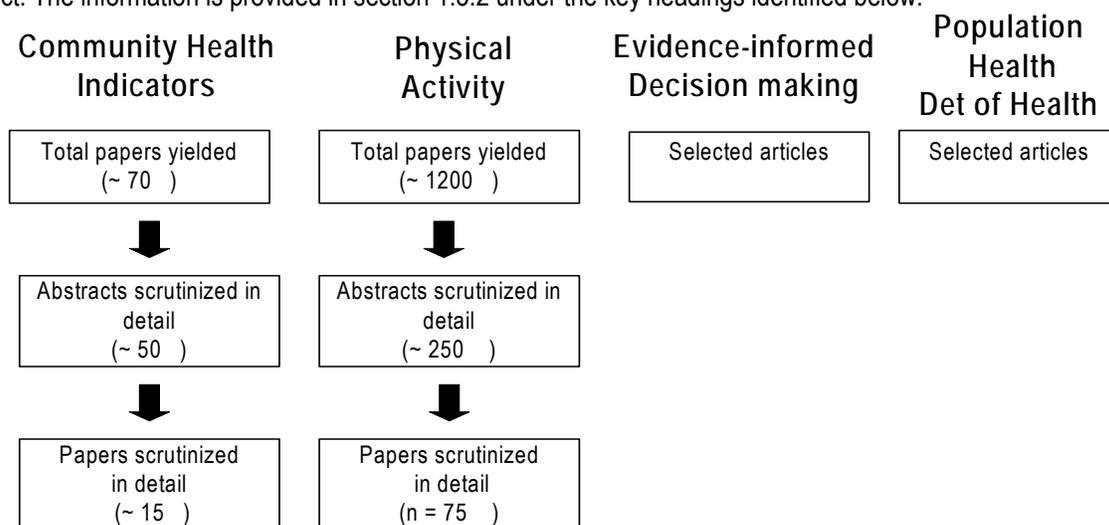


Figure 1

1.3.2. Assessment

Population Health/Determinants of Health

The recent Senate Subcommittee Report on Population Health refers to population health as “health outcomes and their distribution in the population... influenced by the complex interaction of a wide range of determinants over the life course.”⁶² The determinants, to which the Subcommittee refers, include a wide range of factors identified in the literature as income, social support networks, employment, education, early childhood development, physical environment, lifestyle, personal health practices and coping skills, healthcare, biology and genetics, gender and culture.^{57,62,70}

The evidence is now clear that differences in health status result from the effects of these health determinants resulting in health disparities between various groups and individuals in society. To improve the health of a population these health disparities must be addressed.^{31,41,57,62,70} Despite evidence to support this concept there is little understanding and even less action on the part of the public, politicians or even health authorities to tackle health from this perspective. The wide range of health determinants (social, economic, environmental, biological), involve different levels and sectors of government and mean a collaborative, intersectoral approach is needed. Such an approach to reduce health inequities is often referred to as a population health approach and is not without its challenges. However, countries around the world are beginning to move in this direction.

“In Australia, four state governments... have taken concrete action to improve population health and reduce health disparities...”

England is the first, if not the only, country with ‘whole- of- government’ policy to reducing health disparities and improving overall population health...

Finland has had an explicit policy aimed at improving population health and reducing health disparities since 1987...

The New Zealand health strategy adopted in 2000 explicitly addresses health disparities and the health of the entire population, but its implementation is limited in scope to actions taken by the health sector.

In 2007 the Norwegian government tabled in parliament a National Strategy to Reduce Social Inequalities in Health...

Sweden has a ‘whole- of- government’ approach to population health ... and has its population health policy enshrined in legislation.”⁶²

It is a population health approach that Capital Health is undertaking with its new strategic directions.¹⁸ The Senate Subcommittee indicates that there is ‘no single right way’ to implement this approach. However, a key recommendation according to the World Health Organization is to raise awareness of the link between the determinants of health and health outcomes, measure the problem and evaluate action.⁷⁰

The WHO recommendation supports Capital Health’s actions to develop evidence-informed community health indicators. However, such indicators will not improve population health status unless they are utilized to guide decision-making. Decisions regarding priorities for action must be made and effective interventions to improve the priority indicators must then be implemented.

Evidence-informed decision-making

An aim of this intervention project is to determine if the development and discussion of evidence-informed community health indicators and an evidence-informed physical activity strategy influences Capital Health’s decision making. Is the research evidence, related to these issues, utilized by Capital Health to guide strategy, resource allocation and policy development?

A review of the literature related to knowledge translation, prepared for the Nova Scotia Health Research Foundation indicates that research evidence is an important element in policy and decision-making. It “helps to clarify facts

[relevant to the decision or policy], provides... new conceptual models that can help frame and refocus debate... and identifies potential solutions to policy problems.... Research evidence is also used to support or challenge the policy status quo".⁵⁵

Despite these benefits, the literature indicates that research evidence in managerial and policy decision making in health care has been underutilized.^{38,55} There are many reasons for this with much of the literature citing the nature of the managerial/policy process and the differences between the research and the policy or management communities as key.^{55,68}

Lomas describes the many types of 'colloquial evidence' that, in addition to research or scientific evidence, combine to influence managerial healthcare decision-making. These include values, habits and tradition, lobbyists and pressure groups, pragmatics and contingencies, professional experience and expertise, political judgment and resources. Together, these elements combine to provide 'context sensitive guidance' in decision making.⁴⁸

Kovner and Rundall indicate that "research evidence does not replace...but rather complements other types of knowledge and information".⁴⁶ To successfully implement a population health approach, utilizing evidence-informed community health indicators and interventions to improve these indicators (e.g. a community wide physical activity strategy), consideration of the above 'colloquial evidence' factors must be considered.

Walshe and Rundall note several ways in which organizations can increase use of research evidence in decision making. First, a culture of 'learning through research' must be nurtured. If an evidence-informed culture is not valued and supported "efforts to deliver useful research evidence to managers are likely to end in frustration."⁶⁸ Second, research evidence must be provided to healthcare decision makers on what they need when they need it. Research evidence can be useful in making operational decisions but it will be particularly relevant to strategic decisions where the importance of the question to the future of the organization may be stake.⁶⁸

Capital Health's current strategic planning initiative seeks a very different path from that taken previously-one that is challenging age old assumptions in an effort to establish a very different future. Research evidence will be essential in guiding this future.

Understanding the way in which decisions are made is also important in determining the use of research evidence. This will be facilitated if 1.) research questions are framed in collaboration with management responsible for the decisions, 2.) research results are summarized concisely and in easy to use formats 3.) research results incorporate the context of the research, assessment of the strength of evidence and implications for practice.⁴⁶ Wide dissemination to relevant stakeholders is also necessary as decision-makers will not use the research evidence if they do not know it exists.

For Capital Health this means not only identifying community health indicators but ensuring that the indicators are brought to the attention of the appropriate board members, directors and managers in a timely manner, with implications for decision making made clear. This involves, describing in lay terms the link between the indicator and health (the rationale), providing the 'evidence of need' (current rates and percentages) and outlining the range of actions/decisions that are anticipated following discussion of the 'package of evidence'.

Development of Community Health Indicators

Understanding the community's health status is essential in the development of population wide strategies for health improvement. Quality information is required in order to set priorities. As the Honourable Roy Romanow stated at the United Way of Canada National Conference, May, 2005, "What we measure counts... the things we count and measure reflect our values as a society and determine ultimately what makes it onto the policy agendas of governments."⁴¹ In other words what we measure is what gets the attention.

The Public Health Agency of Canada outlines eight steps key for implementing health improvement strategies. The first step includes identification of indicators for measuring health status of the population.²⁹ This allows one to measure the progress and impact of interventions. These indicators should include measures of health and risk factors for disease as well as the rates of disease, death and disability. Hancock et al, indicates that "population

health is more than simply the aggregate of the health of the individual members of the population... it must address issues of the inequalities in health... [and also] has to do with...whether the community as a whole is healthy".³⁷

Within Capital Health measuring the health of our population has been recognized as a strategic priority of the Board of Directors with the establishment of a Population Health Committee of the Board. Its terms of reference, which I redrafted, form the foundational support for ensuring evidence-informed population health decisions. The following are the key responsibilities of the committee:

- Ensure that a framework is put in place to measure progress in improving the health of communities including:
 - Development of a core set of community health indicators
 - Development of a process to track and report the indicators
- Review community health indicators and provide evidence-informed recommendations regarding priority areas for district action.
- Ensure Capital Health's strategic and business plans are informed by community health plans, public health renewal reports and relevant population health information.
- Recommend areas for advocacy for healthy public policy through alliances and collaborative partnerships.

The terms of reference supports the literature in recognizing that measuring the community's health status will require not only the identification of indicators, but a system and process to collect data, process it and translate it into a meaningful form easily used by practitioners. For Capital Health, this means building technology, tools and human resource capacity. This intervention project will begin to address these requirements through the development of a set of community health indicators that are evidence-informed, consensus derived and address the determinants of health. As stated above, action to improve these indicators will begin by addressing the indicator of physical inactivity through development of an evidence-informed community-wide physical activity strategy.

The literature abounds with "community health" indicators. However, there does not appear to be consensus among these reports regarding a core set of indicators relevant to measuring the health of a community. There appears to be agreement, among many of the reports as to the process one should use to identify indicators for a given context. This process includes asking many of the questions identified by CIHI¹⁶ when developing indicators such as: What information does one need to know? What are the emerging issues and priorities in the community? Which indicators best address these issues? What indicators are others using to address these issues? What should the indicator look like (its specifications)? The development of standardized specification templates was also noted. Such templates allow benchmarking and comparisons across districts provincially and nationally.

Also common to reports was the use of a consensus building process (e.g. Delphi process) to select the indicators. The involvement in the selection of indicators by those who will use and interpret them will help ensure sustained use.

Discussions held with the Directors of Primary Care and Public Health within the government of Nova Scotia confirmed that there is support for the development and utilization by district health authorities of population health indicators. As government further develops provincial population health indicators, it will be important for Capital Health to ensure alignment with that work.

As indicated in section 1.2, to initiate action on the indicators, the indicator of physical inactivity was chosen as a focus for initial improvement efforts given its high rates, its health implications and recognition that physical inactivity, along with poor nutrition, is a major contributing factor to obesity – a growing public health concern in Nova Scotia.

Other priority indicators will be addressed as part of the business planning process as resources become available. In addition, the full list of identified community health indicators (Appendix 3) will be monitored and reported annually. Negative status changes will be flagged for expediated action.

Chronic Disease

Compared to other provinces Nova Scotia has high rates of chronic disease. For example, Nova Scotia has the highest rate of death from cancer, highest rate of death from respiratory disease, highest self reported rate of arthritis and rheumatism, highest rate of hospitalization for chronic disease and second highest self reported rate of diabetes.²⁰

Epidemiological studies indicate that a large proportion of the chronic disease illness burden is preventable through health promotion activities that address the modifiable risk factors of overweight and obesity, physical inactivity, poor nutrition and smoking.²⁵

Obesity

Overweight and obesity are growing public health concerns. The World Health Organization indicates that the “impact of the obesity epidemic on non communicable diseases such as cardiovascular disease, type two diabetes and cancer, threatens to overwhelm health systems – the need for prevention and control is clear.”⁵⁶

In Canada there has been a significant increase in the combined overweight/obesity rate among youths aged twelve to seventeen in the last 25 years. Obesity among adults eighteen years and over has increased from 14% in 1978/1979 to 23% in 2004. [Although the rate of increase between 2002 – 2003 and 2004 – 2005 has slowed according to the recent National Population Health Survey (2006) this issue remains a national public health concern as most people who are obese are at increased risk for a range of preventable chronic diseases.] The total number of deaths related to overweight and obesity from 1985 to 2000 was more than 57,000 according to research estimates. Researchers estimate that the total direct cost of weight related major chronic diseases to Canada’s health system was nearly \$1.6 billion in 2001. Coupled with indirect costs, this was \$4.3 billion.¹⁴

In Nova Scotia 47% of men and 27% of women are overweight, with 20% of males and females obese.

It is estimated that over 1000 Nova Scotians died prematurely in each year due to obesity related illness, losing 4000 potential years of life. Obesity related illnesses cost the Nova Scotia health care system an estimated \$128,000,000 annually, 6% of total direct health care costs in the province. When productivity losses due to obesity, including premature death, absenteeism and disability, are added the total cost of obesity to the Nova Scotia economy is estimated to be more than \$268 million a year. This may compare to the estimated \$430 million in direct and indirect costs due to tobacco in Nova Scotia. Because smoking is on the decline and overweight is increasing, it is predicted that obesity related costs will soon overtake the cost of tobacco related illness.²⁵

Within Capital Health the Chronic Disease Prevention and Management Committee has identified obesity as an initial focus for which interventions should be developed. The need to move in this direction has been supported in the district’s strategic planning document.¹⁸ This document is a result of consultations with thousands of residents both internal and external to Capital Health.

The problem of obesity is complex. “The risk of developing overweight and obesity depends on lifestyle factors such as food intake and physical activity levels.”⁶¹ These, in turn, are influenced by determinants of health such as income, education, environment and gender. Research indicates that the most successful approaches to addressing the problem are ecological. Ecological approaches involve strategies that address individual (intrapersonal and family), environmental (institutional and community), and population factors. To date, however, most strategies involving diet and activity have been focused on individuals and groups.⁵⁶ Examination of the determinants of obesity would suggest a population health approach may be the most promising - one that is comprehensive, involving a range of actions across settings with emphasis on healthy living (increased physical activity, decreased sedentary living, healthy eating) not necessarily weight/obesity.⁵⁶

The second part of this intervention project, the development of a multilevel physical activity strategy, supports a comprehensive approach in its community wide focus.

Physical Activity

Physical activity confers significant health benefits - protecting against heart disease, stroke, hypertension, type two diabetes, colon cancer, breast cancer, osteoporosis, depression, anxiety and stress.⁶⁷ These are all significant health issues within Capital Health.

Studies may not support the efficacy of exercise alone in achieving weight loss. However, studies do support the efficacy of physical activity in preventing weight gain, preventing worsening of already established obesity and reducing body mass in obese people. There are health benefits of physical activity regardless of the effect on weight.⁶¹

Of particular note is the 2004 research by Bauman and Miller, related to the risk of physical inactivity. This research looked at:

1. the prevalence of the risk factor of physical activity (the percentage of the population that has the risk factor)
2. the risk associated with the factor (the risk of developing an outcome if the risk factor is present)
3. the population attributable risk (which answers the question 'if you abolish the risk factor, how much disease [outcome] would you prevent?')^{5,6}

The table below indicates that the approximate population attributable risk for coronary heart disease is far greater for the risk factor of physical inactivity than it is for the risk factors of either obesity, smoking, hypertension, or high cholesterol. This further supports the choice of the indicator of physical inactivity as an initial focus for improvement.

Estimates of PAR for CHD by risk factor (Bauman and Miller 2004)			
Risk factor	RR estimated	Median of prevalence estimates	Approximate PAR for CHD
Physical inactivity	1.75	52%	27%
Obesity	1.4	12%	6%
Smoking	1.7	29%	18%
Hypertension	2.0	28%	22%
High cholesterol	1.8	26%	17%

Table 1

Research also indicates that the greatest impact on health improvement related to cardiovascular disease comes from moving the sedentary population to a moderate level of activity as opposed to moving already active individuals to an even higher level of physical activity (Bauman showing data from Lee, 2001, Crespo, 2002, Wagner 2002, Wannemethee, 2000, Manson, 2002, Davey, Yu, 2003, Hu, 2001).⁵ This is an important finding. It indicates where public health providers and policy officials might best direct their attention to achieve the greatest population health impact.

Research indicates also that insufficient physical activity has contributed to the increase in childhood obesity.³⁰ In 2004, 1 in 4 (26%) Canadian children and youth (2-17 years) was overweight. In the last 15 years, childhood obesity in Canada, has increased from 2% to 10% among boys and from 2% to 9% in girls.⁴⁷ These children have a tendency to continue to be overweight or obese as adults with the associated health risks.

Within the Halifax Regional Municipality there is a physical activity strategy for children and youth entitled Healthy Kids Active Kids. The three year evaluation of this strategy has revealed discouraging results. Although grade three students increased their levels of physical activity both grades seven and eleven had decreased levels following the intervention. These results are being examined closely by the researchers. Their feedback will be used by our steering committee to inform our wider community strategy targeting children and adults, as well as certain specific populations. Based on research evidence, our strategy plans to take a more comprehensive, community-wide approach, with a focus on partnership commitment at the CEO level.

Current statistics indicate that physical activity levels in Nova Scotia are lower than elsewhere in Canada. Over half of Nova Scotians are inactive (50.8%). Only 24.1% meet the minimum activity level to have optimal health benefits.⁴⁷ Activity levels for the Capital district are only slightly higher than the provincial rates, with 52.6% of HRM residents being active or moderately active.

Physical activity is an important determinant of health as a personal health practice. It influences and is influenced by other determinants such as income, environment, education, gender and culture. Barriers such as inadequate income, lack of social supports or inaccessible physical facilities often prevent people from being physically active. Conversely, being physically inactive can impact one's ability to earn an income, develop a social network or participate in certain activities. These factors need to be considered in the development of effective interventions.

The question becomes, what strategies/interventions work best in helping all people within Capital district become more physically active?

The design and high level implementation plan for the second part of this intervention project (physical activity strategy) is based on the following key documents. These documents were chosen as they provide research-based theoretical and empirical evidence about the problems being addressed, as well as practice based information:

- 1.) Ontario Ministry of Health Promotion, Active 2010, Community Physical Activity Planning, A Resource Manual for Communities Preparing Plans.
- 2.) Coalition for Active Living. Framework for a Pan-Canadian Physical Activity Strategy and Investing in Prevention, A Business Plan to Increase Physical Activity in Canada. 2006
- 3.) Kahn, A., et al. Effectiveness of Interventions to Increase Physical Activity. A Systematic Review. *American Journal of Preventative Medicine*, 2002; 22 (45) 73-107.
- 4.) Bull, F., Bauman, A., Bellew, B., Brown, W. Getting Australia Active II, An Update of Evidence on Physical Activity for Health. National Public Health Partnership, August, 2004.
- 5.) 2006 Canadian Clinical Practice Guidelines on the Management and Prevention of Obesity in Adults and Children, *CMAJ* 2007.
- 6.) Saskatoon Health Region, University of Saskatchewan (College of Kinesiology), City of Saskatoon (Community Services Department). Saskatoon in Motion. Five Years in the Making 2000-2005. Saskatoon Health Region, University of Saskatchewan (College of Kinesiology), City of Saskatoon (Community Services Department) 2005.

The Active 2010 document describes a step by step process, with examples and worksheets, for use by communities in developing physical activity strategies. Our steering committee has chosen to use this resource to guide the development of our implementation plan (see Section 1.4.2) given its straightforward approach.

The Pan-Canadian physical activity strategy and business plan outlines key strategy components and is both expert and research based.

The systematic review provided by Kahn was appraised and discussed with international experts. It was identified as the best available evidence upon which to base physical activity interventions. This review was carried out for the *Guide to Community Preventive Services*, "which provides recommendations on population based interventions to promote health and to prevent disease, injury, disability, and premature death, appropriate for use by communities and healthcare systems".²² The Guide indicates that community based interventions to promote physical activity are central to a strategy to increase physical activity behaviors in the population as physical activity is linked to behavioral, social, physical and environmental correlates.

Overall, the quality of the systematic review by Kahn, et al, appears high. As the review translates the strength of the evidence (strong, sufficient, insufficient) into recommendations, it is helpful to public health planners and decision makers in determining which interventions to increase physical activity in the population, are likely to be successful.

Strong evidence exists to support the efficacy of the following community-based interventions to increase physical activity: community-wide campaigns, individually adapted health behavior change, school based physical education, social support in community settings, creation and/or enhanced access to places for physical activity combined with informational outreach activities.⁴⁴

Sufficient evidence exists to support the efficacy of the following community-based interventions to increase physical activity: “point- of-decision” prompts, community scale urban design, street scale urban design,⁴⁴ land use policies & practices.³⁹

The review noted the *Guide’s* insufficient evidence to determine effectiveness of the following interventions: classroom based health education focused on information provision, mass media campaigns, health education with TV/video game turn off component, college age physical education/health education; family based social support, transportation and travel policies and practice.⁴⁴

Kahn’s systematic review followed the Guide to Community Preventive Services methods for systematic reviews. The purpose of the review and search methods were appropriately described. However, it was noted that the search strategy was restricted to American databases and the English language. It may have been helpful to include European databases such as EMBASE and a review of at least the abstracts of foreign language studies. (To obtain information on effective interventions being implemented in European and Asian countries, websites cited in section 1.3.1, were selectively explored). Kahn provided clear definitions of the interventions and divided the interventions into logical groupings. Internal and external criteria for studies were clearly outlined. However, for the 159 studies that were excluded it would have been preferable to include a table providing reasons for study exclusion. In addition, a description of the process utilized when there was disagreement among the assessor’s regarding study inclusion and exclusion could have been provided.

In evaluating and summarizing the studies, medians were calculated as summary effect measures for each type of measurement and compared across outcomes for consistency. However, weighted measures were not used, meaning that the size of the various studies could not be factored in. Presumably sufficient data was not available to calculate weighted measures but this was not stated explicitly.

Discussion with international experts corroborates CDC’s recommendations regarding effective interventions to increase physical activity in the community as being the best available evidence published to date.^{5,6}

Additionally, a review of national strategies by Adrian Bauman,⁷ covering an additional 4 years since the CDC recommendations, comments on promising practices and is aligned with CDC’s recommendations.

Following a review and discussion with experts of various programs and models being implemented across Canada and other countries, to increase physical activity in the community, *Saskatoon’s in motion* model has been highlighted for consideration. This is one of the few published models identified in Canadian literature demonstrating effectiveness in increasing physical activity in a population (a 14% increase from 2000 to 2004 in the number of Saskatoon residents who were active enough to receive health benefits). Its emphasis on partnership development, community capacity building and consultation, align well with the intent in Halifax and indicate that this model, or a modified form, may be applicable to our local context. Further discussion is needed to gain a better understanding of how the research was carried out and which elements of the model contributed primarily to the results. This will help identify the critical contextual factors important in determining the model’s applicability to the Nova Scotia setting. Consultation with other communities where the model has been implemented such as Calgary, Abbotsford, British Columbia and the province of Manitoba are ongoing. However, there has not been published evaluation data regarding efficacy of interventions for these latter locations.

The *2006 Canadian Clinical Practice Guidelines on the Management and Prevention of Obesity in Adults and Children*, also was identified through the literature review as having applicability to this intervention project. Although dealing primarily with the prevention and management of obesity, the Guidelines provide evidence regarding

appropriateness of physical activity interventions. For example, the Guidelines recommend that activity for children should be fun and recreational, tailored to the relative strengths of the individual and family and encourage reduction of sedentary activities and screen time.

1.3.3. Applications

Community Health Indicators/Population Health Approach/Determinants of Health

Evidence supports the need to identify community health indicators as a first step in the development of population health strategies to address chronic disease. Although the evidence does not identify a common set of indicators that should be used for all communities it does recommend that the selection of the indicators be consensus driven and involve those who will use the indicators. This concept was validated by Capital Health's Population Health Committee of the Board. A working group composed of staff who will use these indicators in their work was struck to begin development. A modified Delphi process was adopted to gain consensus from key decision makers within the organization regarding selection of indicators.

The use of a standardized indicator specification template is supported, as such a tool can describe the measure (the indicator) in a way that persons from a variety of settings can understand and apply it consistently.¹⁵ This promotes comparison and benchmarking across districts, and also provincially and nationally. This concept was also applied and a specification template agreed upon (Appendix 1).

The wide range of indicators chosen supports the evidence that to improve population health the range of factors that influence health must be addressed.

Physical Activity

While there is considerable evidence supporting the health benefits of physical activity there is less published evidence of the effectiveness of interventions to increase physical activity in communities. However, the urgency of the obesity and chronic disease situation in Nova Scotia requires us to consider and act on the **best available** evidence and not wait for the **best possible** evidence. The CDC systematic review on the effectiveness of interventions to increase physical activity in communities is particularly helpful as it ranks the strength of the recommendations provided (strong, sufficient, and insufficient). The focus of our strategy will be in areas for which there is strong evidence. In addition, it is hoped that our community-wide physical activity strategy will add to the body of knowledge through innovation and research in areas for which there currently is no evidence of effective interventions.

Systematic reviews of community based physical activity interventions often exclude many studies,⁴³ that may contribute to the body of knowledge in this area, due to the studies not meeting specified inclusion criteria. This is because its often difficult to impose the rigorous quality standards required by many systematic reviews when conducting community research. Thus, single studies may also have application within the context of this intervention project. Of particular note is the Healthy Kids, Active Kids initiative carried out within Nova Scotia, 2003-2006. Although this initiative focused on children, the lessons learned from its evaluation can be applied to the development of our community wide strategy. For example, the study noted that if one wishes to move the sedentary population to a moderate level of activity, girls would be an excellent focus as they represent the largest percent of the sedentary population. In addition, the age group on which to focus efforts would be the junior high level, as it is at this time that physical activity levels for girls and boys begin to drop. When using single studies upon which to base interventions, evaluation of their effectiveness is essential in helping understand why the intervention was or was not successful.

In summary, the evidence would suggest that a comprehensive approach across many settings, with an emphasis on healthy living (increased physical activity, decreased sedentary living, and healthy eating) and not necessarily on weight/obesity may be the most promising in both increasing physical activity and decreasing chronic disease in the population. For Capital Health, this means integrating the community-wide physical activity strategy with the district's chronic disease prevention and management strategy and in particular, the healthy eating strategy. It also means partnering with other sectors and organizations.

Facilitators and Barriers

When considering application of the evidence, recommendations must always be considered and evaluated in light of local needs, objectives and restraints. In this regard there are numerous contextual factors that will facilitate/impede the implementation of this intervention project within Capital Health – both the development of community health indicators and initiation of action on the indicators through the development of a community-wide physical activity strategy.

Facilitators:

Experience within Capital Health suggests that CEO leadership is critical in:

- shifting organizational culture,
- reallocating resources from one area of an organization to another,
- gaining organization wide support in utilization of health status data to make decisions and
- creation of partnerships external to the organization.

All such factors are essential if Capital Health is to successfully utilize community health indicators to inform decision making (take action to improve them).

Capital Health has recently appointed a new CEO who believes in innovation and risk taking and the establishment of strong intersectoral partnerships with organizations such as business, education, municipality, school board and community. The CEO also believes in performance excellence through evidence-informed decision-making on the part of all staff within the organization. Such leadership will be a key facilitator in the implementation of this intervention project.

Capital Health has a board whose members are supportive of the population health approach. Capital Health has established a new Population Health Committee of the Board, the mandate of which includes ensuring that a set of community health indicators are defined and a process to track and utilize them is established. Having support at the highest level of the organization is critical in facilitating the required cultural shift to implement and sustain this intervention project.

Capital Health is in the process of implementing a new strategic plan that will have as its foundation the needs of the community. Given the community desire, from recent community dialogues, to move from an acute care focused system to one that values a broad population health approach, the strategic plan will be a key facilitator in promoting both the utilization of community health indicators in decision making and the implementation of a community-wide physical activity strategy.

Capital Health was accredited as a district in November, 2007. The accreditation standards require the organization to reflect on and make recommendations for improvement in the quality of services provided. This includes assessing how the organization is meeting the needs of the population and what indicators are used to determine if those needs are being met. This process afforded opportunity to communicate the need for a population health approach to improve health status in Nova Scotia.

Additional intervention project facilitators include:

- the readiness of Halifax Regional Municipality to develop a municipal physical activity plan,
- Halifax Regional School Board's concern over the low physical activity rate within its school population and its recognition that healthy learners are better learners,
- Halifax Chamber of Commerce's publicized concern over the obesity rate of Nova Scotians and its impact on business,
- Nova Scotia Heart and Stroke Foundation's top strategic priority identified as the need to increase of physical activity in the population.

Barriers:

A key barrier to project implementation is the relentless competition for resources from and protected budgets of the acute healthcare sector. The need to convince the acute care sector that spending resources on upstream activity to address chronic disease/obesity is challenging. An additional challenge is finding the resources (human and financial) to track the identified community health indicators and implement the community-wide physical activity strategy. From a political perspective, despite the increased national emphasis on improving public health capacity, there may be a lack of political will and ability to invest in population health initiatives given the Federal and Provincial focus on wait times for acute care services. Opportunities to improve the community's understanding of the importance of population health initiatives will need to be considered. Community pressure may encourage political leadership to create and invest in supportive policy in this area of health.

1.4. Intervention Project Objectives, Model / Methods, and Strategies for Implementation

1.4.1 Objectives

The ultimate goal of this project is to provide evidence-informed research, in a managerially useful way, on the 'health' of the Capital Health community to help guide decision-making at the governance and organizational levels. The change to be brought about by this intervention project will be the utilization of this research evidence to inform decision making.

The objectives of the intervention project are:

Short term (1-2 years)

1. To develop a set of evidence- informed community health indicators for Capital Health.
2. To develop a process to track and report the community health indicators.
3. To initiate action to improve indicators by developing an evidence informed community-wide physical activity strategy for the Capital Health district.

Medium term (2-5 years)

1. To ascertain if the development and discussion of a set of evidence informed community health indicators and an evidence informed community-wide physical activity strategy are utilized by Capital Health to guide decision-making.

Long term (5-10+ years)

1. To increase the number of Capital Health residents that incorporate physical activity into their daily lives.
2. To improve the health status of the Capital Health district population

Impact on organizational activities:

The development and reporting of a set of community health indicators to the highest level of the organization (the board) will facilitate integration and profiling of population health issues. It will provide evidence for focused action by the organization as opposed to the current situation where different program areas are pursuing different population health strategies independently. Integration of effort will result in greater impact. At the Board and Executive level the project will have impact on business and strategic planning assisting the organization to better determine where and how to allocate resources. The project will provide the organization with measurable quality indicators to monitor system planning and performance related to population health improvement.

Implementing the system to report and track the community health indicators will require resources such as decision support analysts, epidemiological support and a reporting tool. As there is no new funding, this work will have to be accomplished through existing structures and personnel. Current workload will have to be prioritized to take on this new work. The Decision Support department of Capital Health is currently being realigned to better support this and

other informational needs. Resources may need to be reallocated to hire staff with skills that the organization does not currently have. Public private partnerships may have to be explored to supplement existing resources.

This intervention project has been instrumental in influencing the terms of reference of the Population Health Committee of the Board creating a significant foundation for evidence-informed decision-making regarding population health activities. The project has also influenced the work of the Quality Committee of the Board which has now included in its mandate the monitoring of community health indicators in addition to acute care indicators.

Other organizational impacts include an anticipated increase in the number of partnerships with external stakeholders. Evidence indicates that population health issues cannot be successfully addressed by the health sector alone. The recognition of the need to establish strong partnerships with external organizations such as school boards, municipality, university, health charities, IWK Health Centre and the private sector is demonstrated by the CEOs' signing of a partnership agreement to increase physical activity in HRM. (Appendix 2). Other evidence of this recognition includes the signed memorandum of agreement between Capital Health and HRM indicating the special partnership relationship between the two organizations. Additionally, the Director, Community Health has been invited to sit on the Halifax Chamber of Commerce's Health Action Committee, in recognition of the important role that business has in impacting health of a community.

Fostering an evidence-informed organizational culture:

Throughout the various phases of this intervention project there was opportunity to foster an evidence-informed organizational culture. The evidence (indicator definitions, rationale, rates and comparisons) was drawn upon to "connect the dots" for staff between community health indicators and overall health status of the Capital Health community, and in particular, the link between physical inactivity and poor health. The evidence was used to engage staff in discussions regarding activities that would be most beneficial for Capital Health to focus on to achieve population health improvement. Provincial and national comparisons provided useful reference points. Examples of effective interventions being implemented elsewhere were also discussed to instill an "if they can, we can" attitude.

The following specific opportunities were utilized to foster an organizational culture more receptive to the use of evidence:

- The redrafting of the Population Health Committee's terms of reference to include specific reference to the development of evidence-informed community health indicators.
- Presentations and distribution to the Physical Activity Strategy Group of six sentinel documents outlining effective, evidence-based interventions to increase physical activity in the population. Although many more documents were researched, the evidence of utilization of research evidence indicates that a key barrier to uptake is the lack of time to read and appraise the research evidence. Therefore, these tasks were performed by myself and one member of the Physical Activity Strategy Group. We provided only the most relevant documents in whole to the entire group (listed in section 1.3.2) and summaries for other documents.
- A breakfast meeting presentation entitled, "The Case for a Physical Activity Strategy" to CEOs of the partner organizations. Documented research evidence was highlighted.
- Four focus group sessions were held with representatives from health, business, government and community, during which the utilization of evidence to build the strategy was discussed.
- The development of Capital Health's new strategic plan afforded many opportunities to discuss the need to develop an evidence-informed culture. These discussions resulted in inclusion of specific strategic statements that encourage this type of culture.(see results section 1.4.4)
- Discussion by the Quality Committee of the Board of the need to monitor community health indicators and include population health indicators in the roster of indicators that are reviewed regularly by this committee. This resulted in a change in the Committee's terms of reference (see results section 1.4.4)
- Discussions with approximately 60 key stakeholders regarding priority areas for action based on the community health indicator information package. (Appendix 3)

Success in this project will encourage other areas of the organization to shift to an evidence-informed decision making framework. This shift could also extend beyond the organization to partner organizations due to the close working relationships established throughout the project with these organizations.

1.4.2 Models and Methods

A mixed methods approach was used to implement the intervention project. Both quantitative (questionnaire, modified Delphi method) and qualitative (focus groups, one to one interviews, telephone survey) techniques were utilized.

Logic models were developed for both the development of community health indicators and the community-wide physical activity strategy. The purpose of the logic models is to visually describe “the resources and inputs that are needed for staff/practitioner to act in certain ways so that the participants/clients will learn something or demonstrate change (short term outcome) to address a community problem (mid term outcome) which in turn will solve a larger community need (long-term outcome)”.²⁶ The development of the logic models demonstrate the link between the research evidence found in the literature review and the objectives and outcomes of the project.

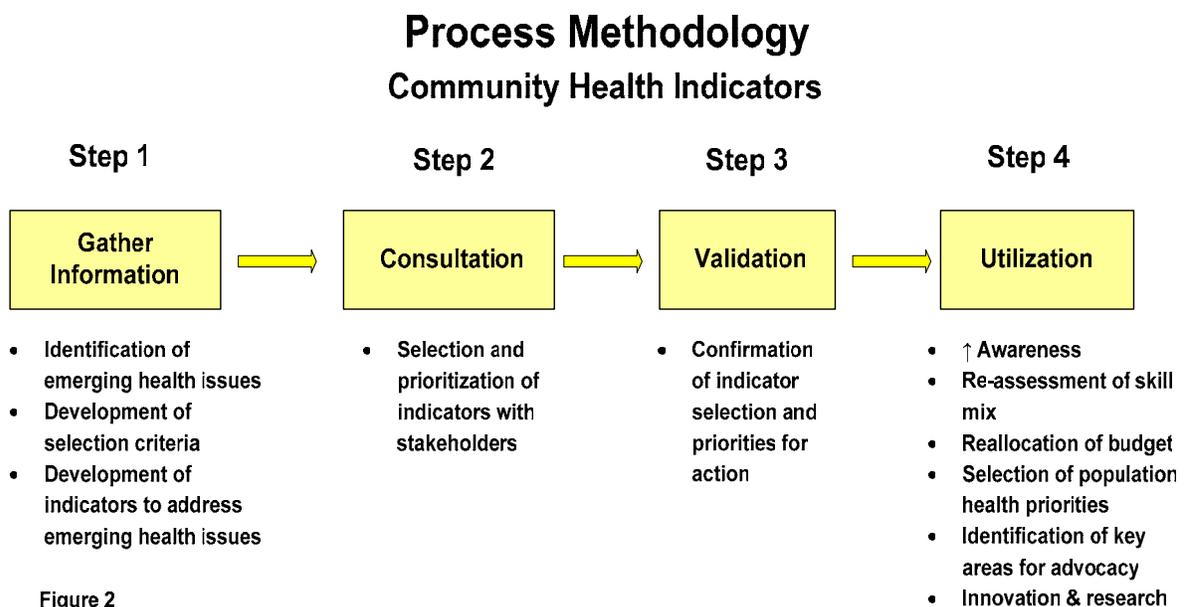
Detailed methodology and logic models are described below.

Community Health Indicators

Indicators provide the evidence to support decision-making (strategic, business, program). Given the district’s limited resources and the length of time that it takes to change population health indicators, the working group took a pragmatic approach to indicator identification.

The intent is to identify a manageable number of indicators for Capital Health to monitor on an ongoing basis, and a smaller subset of priority indicators for which action to improve the indicator should be taken. Such a process is not without challenges. Identifying too many indicators dilutes the health information of the population and the list becomes unmanageable. If too few indicators are identified one does not have an acceptably accurate picture of the health of the population.

The following four step process methodology, based in part on the CIHI framework for indicator identification, guided this part of the intervention project. The logic model, Figure 3, depicts the interrelationship between these process steps (the activities) and the inputs, outputs and outcomes.



Step 1: Gathering Information

A subcommittee of the Population Health Committee of the Board was struck to develop the indicators, fulfilling a key component of the Committee's terms of reference. Members of this subcommittee include the Medical Officer of Health, Director of Planning and Quality, Head of the Health Outcomes Unit, Community Health and Epidemiology, Research Coordinator, Community Health and Epidemiology, Decision Support Analyst and the Director, Community Health (chair). This group agreed to build upon previous organizational work in this area, reviewing internal documentary evidence compiled to date. This notion supports change management evidence that indicates use of existing resources and systems increases the likelihood of acceptance of the change. The group began deliberations by asking the question, what information do we need to know? The group considered emerging health issues and priorities using key age groups (infants and children, youth, adults, and seniors) to guide thinking.

Literature related to categorizing indicators revealed several different methods including the use of age groups. The working group chose age groups as a way to categorize the indicators for three reasons: 1. interventions to improve indicators are implemented very differently depending upon the age group; 2. such a breakdown renders it easier for the IWK Health Center, our children's hospital, to identify its role in taking action to improve population health; 3. practitioners who deal with specific populations based on age will more readily see the application of these indicators to their work.

Criteria to guide the selection of the indicators was then developed. A literature review of various indicator projects and a limited environmental scan, outlined in section 1.3, was conducted to identify what other jurisdictions were doing in this regard. Findings were discussed by the working group. Critical to the discussion was the need to ensure that the criteria chosen be applicable to the Capital Health context. That is, the chosen indicators must be useful in guiding the decisions that Capital Health needs to make over the coming years. Hancock et al, in an article *Indicators that Count*,³⁷ observes that it is more important that indicators be useful to communities (in this case Capital Health) than developing a standard set of core indicators useful nationally as measures of comparison but with little relevance at the community level. The indicator criteria that Saskatchewan Health developed was adapted to guide the selection of indicators. This framework was chosen as it is closely aligned with the values and objectives of our working group. Also, it aligns with the evidence regarding what constitutes a good indicator as described by Accreditation Canada:

- Meaningful and relevant [to those that will use the indicators]
- Collected consistently and accurately without too much extra work
- Follows standard definition
- Are rate based
- Aligns with organizational goals and objectives

An indicator specification template was then developed building upon existing organizational work. This template will allow comparisons and benchmarking across districts provincially and nationally.

Criteria Used to Identify Indicators*

The following criteria were considered in assisting us to narrow the list of indicators. These criteria provide a guide only as due to various limitations, not all indicators meet each of the criteria.

Linked to one or more of the strategic priorities of Capital Health	Process of identifying what is important to measure may influence or play a role in the refinement of CDHA's strategic priorities
Actionable by Capital Health	Capital Health can influence a change (advocacy, partnership, direct intervention)
Feasible to measure and report	Measurable in a practical and cost efficient way, and derived from available and accessible management information systems
Evidence based	Evidence exists that links a change in the indicator to improved health outcomes; strength of evidence varies depending on indicator
Easily Understood and Used	Easy to understand by the intended users (in this case, the CDHA board, Senior Leadership Team, Community Health Boards, staff)
Reliable and Valid	Scientifically sound. The concept intended to be measured is being done so consistently (reliability) and accurately (validity)
Sensitive and Specific	Responsive and accurate for the purpose that the indicator is used <ul style="list-style-type: none"> • Sensitive – readily responding to external stimuli • Specific – definite, having a distinct effect. If we make a change, we should readily see it in an indicator <p>Alternatively, if we see an indicator change, it can be correlated to an action/initiative that was undertaken</p>
Comparable	Comparable across jurisdictions (e.g., other DHAs, provinces, nationally) and over time

In addition, the entire set of indicators should, together:

- **Measure activity and progress of population health strategies**
- **Provide a balanced picture** across objectives / program areas / funding pools, across types of indicators (e.g., output, outcome, quality, etc.) and between good and bad news
- **Have minimal overlap and duplication**, and provide information that is measurable and useable in an ethical and legal way

*Adapted from Saskatoon Health
Table 2

Step 2: Consultation

The list of indicators was then refined through consultation (modified Delphi process) with key stakeholders. This method was chosen from the literature following consultation with the Nova Scotia representative who had participated in the national prioritization process for primary health care indicators (using a similar approach). He recommended this approach as a valuable way to gain consensus.

To assist the stakeholders in refining the list of indicators, an information package was developed (Appendix 3) and presentations given. This method for dissemination of the research evidence was chosen, as opposed to mail only, as studies indicate that active, multi-faceted methods of knowledge dissemination (in this case e-mailed questionnaire/ indicator data+ plus presentation+ discussion) result in greater utilization of the research.⁴⁸ The package of information contained a background memo, short questionnaire and for each indicator:

- definition
- brief rationale providing the link the between the indicator and health
- data (current rates, percentages)
- comparisons (provincial and national)
- source
- brief profile/ demographics of Capital Health

During the presentation contextual and research evidence supporting the need to develop and monitor community health indicators was discussed, as well as research evidence linking the indicator with health outcome.

Stakeholders were asked if we had the right indicators, what was missing, what should be deleted. They were also asked to choose two indicators for priority action in each age group. To assist them in this process they were asked to consider the 'evidence of need'(the data) provided to them in the information package and to also consider where Capital Health could have most impact in influencing change (from their individual perspectives). This consensus building process supports change management studies that indicate acceptance of change (in this case utilization of research evidence in decision-making) is enhanced if a culture of engagement of stakeholders and shared decision-making is fostered.

Stakeholders were asked, using Likert Scales from 1 to 5, if the exercise (information provided and discussions) increased their awareness of the health status of the community and the link between the indicator and health ('evidence of need'). Change management studies indicate that the first step in changing behavior is to increase awareness around the issue. It was hoped that the evidence provided through presentation and discussion would lead to an increased stakeholder awareness of the need for the development and utilization of community health indicators in decision-making, and also the need to move from a system focused solely on acute care to one that values a broad population health approach.

Finally, stakeholders were asked, using Likert Scales from 1 to 5, if monitoring and reporting community health indicators would help guide the board and organization in its strategic and business decision-making.

Step 3: Validation

Stakeholder feedback regarding priorities was received and analyzed. Results clearly indicated consensus regarding priorities for action. Further prioritization/validation sessions were not therefore required at this time. Wider consultation is planned following presentation to the Population Health Committee of the Board.

Step 4: Utilization

Evidence of effective interventions to improve the suggested priority indicators for action was discussed by the working group. Survey results regarding priority indicators for district action were presented to the Population Health Committee of the Board for their consideration and utilization. Given limited resources it was decided to choose one indicator for which improvement efforts would be implemented. Physical inactivity was chosen (reasons previously outlined) and a 10% improvement target cited. This target is supported in the literature as reasonable – not so high to be discouraging and not too low to prevent movement in the direction of improved health.

Targets for other indicators will be identified through an evidence review once improvement efforts for these indicators have been initiated. Capital Health has decided to focus resources on one indicator at a time, learn from that effort and apply the learning to the next improvement effort.

A process for ongoing tracking and reporting of community health indicators was also recommended:

It was recommended:

- that Capital Health's new Chief Operating Officer, whose mandate includes responsibility for performance excellence and quality management, be appointed executive sponsor responsible for tracking and reporting community health indicators (studies support champions for change);
- that the tracking and reporting process be integrated at both strategic and operational levels and drive practice in public health, community health, primary and acute care teams. For example, if the organization has a strategic goal of increasing physical activity in the population then how this is being addressed at the operational level should be monitored. For instance, Safer Healthcare Now has an AMI (acute myocardial infarction) bundle for smoking cessation but it does not have a physical activity component. The ICONS database monitors cardiovascular risk factors but does not include as part of the data base physical activity levels;
- that, building on existing expertise within quality and decision support departments, a single group be identified to monitor and report progress (annually) regarding community health indicators;
- that the above mentioned group include the services of an epidemiologist, health economist and analyst to support the development of effective interventions to improve the community health indicators, particularly those identified for priority action;

- that a 'dashboard' format for reporting to the Board be developed (concise, easy to read) containing only those sentinel indicators necessary to support Board level decision making; supporting material to be available upon request;
- that the Population Health Committee of the Board receive, discuss and make recommendations to the full CDHA Board for health improvement in respect of the 'dashboard' report;
- that the Quality Committee of the Board also receive, for its information, the dashboard report and recommendations made by the Population Health Committee of the Board;
- that the dashboard report be made available to the broad community.

The following logic model links steps 1-4 (logic model activities) with the inputs, outputs and measures to achieve the outcomes.

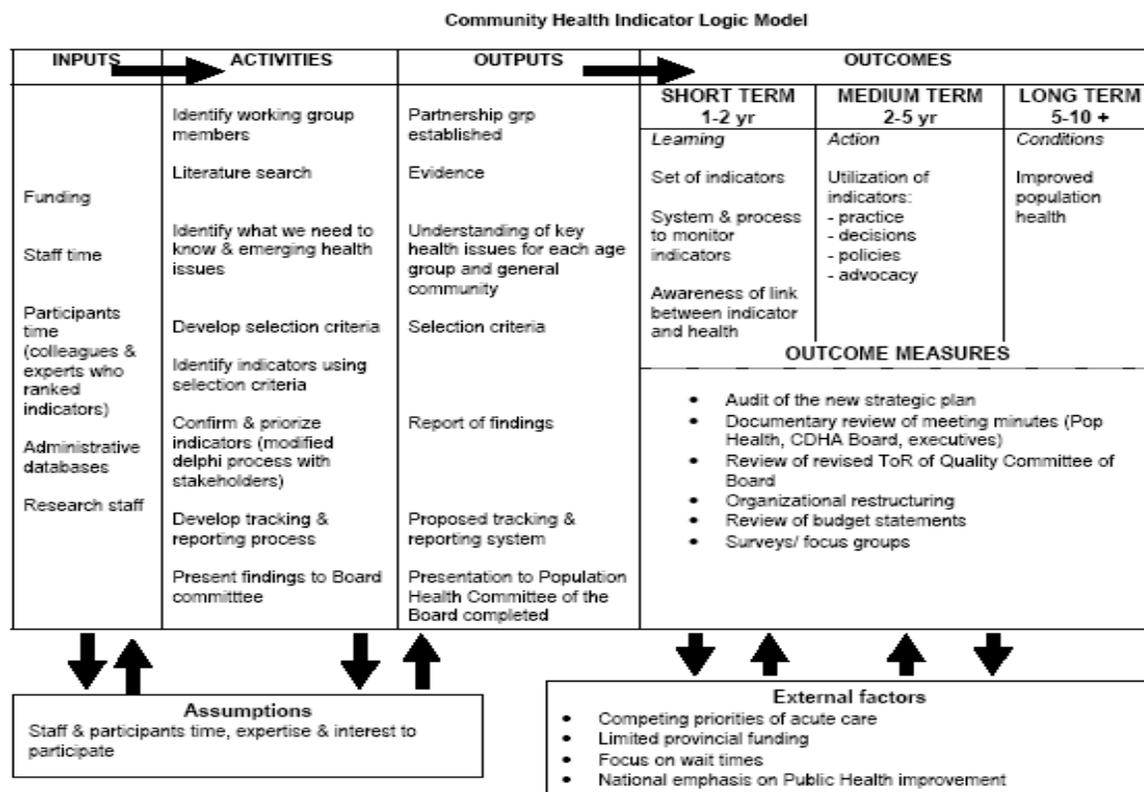


Figure 3

The method of indicator identification, described above, provided evidence-informed information to assist the board in selecting priority indicators for action. It combined both empirical evidence and contextual evidence in a consensus driven process. Literature indicates that research evidence will not be utilized in decision-making unless decision makers are aware that it exists. One cannot expect the Board to identify and resource population health strategies as priorities for district action unless the evidence regarding the need for them is available when and how they need it (in time for budget deliberations and in a managerially useful format -lay language, concise, easy to read). The provision of a set of community health indicators is the first step toward meeting this goal.

Community-Wide Physical Activity Strategy

Funding, partners, administrative databases, and focus group participants were all key inputs required to carry out the activities necessary to develop and gain approval for implementation of the evidence-informed community-wide physical activity strategy for HRM. The following steps describe the process methodology used with reference to the research-based evidence found in the literature.

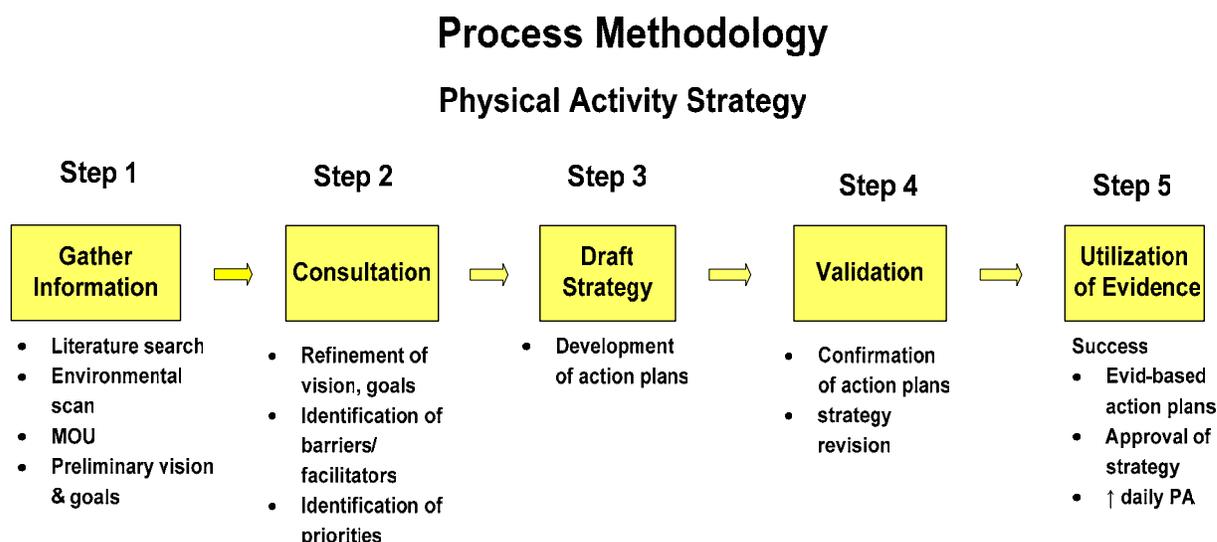


Figure 4

Step 1: Gathering Information

A partnership committee to develop the strategy was the first step undertaken. Evidence indicates that successful interventions to increase physical activity in the population require a community-based, intersectoral approach. The following partners were therefore identified to form a steering committee: Halifax Regional Municipality, Halifax Regional School Board, Nova Scotia Heart and Stroke Foundation, Dalhousie University's Department of Community Health and Epidemiology, Nova Scotia Health Promotion and Protection, IWK Health Centre and Capital Health.

A partnership agreement was developed and signed by CEOs of the partner organizations at a breakfast meeting. Drawing on evidence regarding use of strategic opportunities to influence change this meeting was used to present the evidence and case for the strategy. Media coverage (TV and newspaper) was obtained resulting in calls from businesses and individuals offering to assist. It is believed that signed accountability for results will strengthen the partnership and increase probability of successful change.

Given the size of the project, the number of different organizations involved and the short timeframe for project completion, the committee obtained the advice and assistance of a facilitator with past experience in physical activity strategy development. This individual facilitated the focus groups, visioning and strategy development sessions and assisted the partnership in document preparation. Published documents such as Ontario Ministry of Health Promotion, *Active 2010, Community Physical Activity Planning, A Resource Manual for Communities Preparing Plans*⁵² supported this approach.

A preliminary vision for a community-wide physical activity strategy for HRM was developed based on the literature review and an environmental scan.

Step: 2 Consultation

Focus groups with business, health, education, and community representatives were then conducted for input regarding barriers to and facilitators for a more physically active population in HRM. Evidence regarding the need for a community-wide physical activity strategy was provided to the focus group members prior to the sessions. These focus groups were also used as an opportunity to understand what role these organizations felt they could play in improving physical activity in the population. In addition, input was sought regarding priority groups for which a community-wide physical activity strategy should be targeted.

Further input into the strategy was provided through an omnibus survey conducted by an experienced survey firm. Questions for the Omnibus survey were developed by the partnership committee and refined by a researcher at Dalhousie University. 400 residents within Capital Health were telephoned and the results analyzed by the firm. A summary of results was written by Dr. Chris Blanchard, Faculty, Dalhousie University and member of the steering committee. (Appendix 2)

Focus group data, results of the omnibus survey along with commentary from documentary reviews by steering committee members were analyzed based on elements of a grounded theory approach. Member checking was carried out in an interactive manner allowing for data to be collected, validated and revised until it was felt that participants' feedback had been accurately reflected and that no new information was forthcoming. Feedback received from participants was logged, analyzed and incorporated into the strategy. Informal thematic analysis was used noting recurring themes, topics and experiences.

Step 3: Drafting Strategy

The above results together with the research evidence, environmental scan and expert input (personal communication from attending national and international physical activity conferences) were utilized to develop a draft strategy (vision, goals, objectives, action plans). Action plans were developed based on evidence of effective interventions.

Step 4: Validation

This strategy was presented to focus group participants and experts for validation. Feedback was incorporated and the strategy revised.

In general, priority areas identified by the focus groups aligned well with the evidence that indicates that the greatest impact on health improvement (related to cardiovascular disease) would come from moving the sedentary population to a moderate level of activity. This is as opposed to moving already active individuals to an even higher level of physical activity (Bauman showing data from Lee, 2001, Crespo, 2002, Wagner 2002, Wannemethee, 2000, Manson, 2002, Davey, Yu, 2003, Hu, 2001).^{5,6} Target groups were identified.

Step 5: Utilization of Evidence

The strategy was presented for approval to CEOs of all partner organizations highlighting the link between the evidence of effective interventions and the recommended action plans. Relevance of the strategy to the strategic directions of each partner organization was noted in the presentation. Studies indicate that uptake of research evidence is increased if applicability of the research evidence to current management decisions is clear.

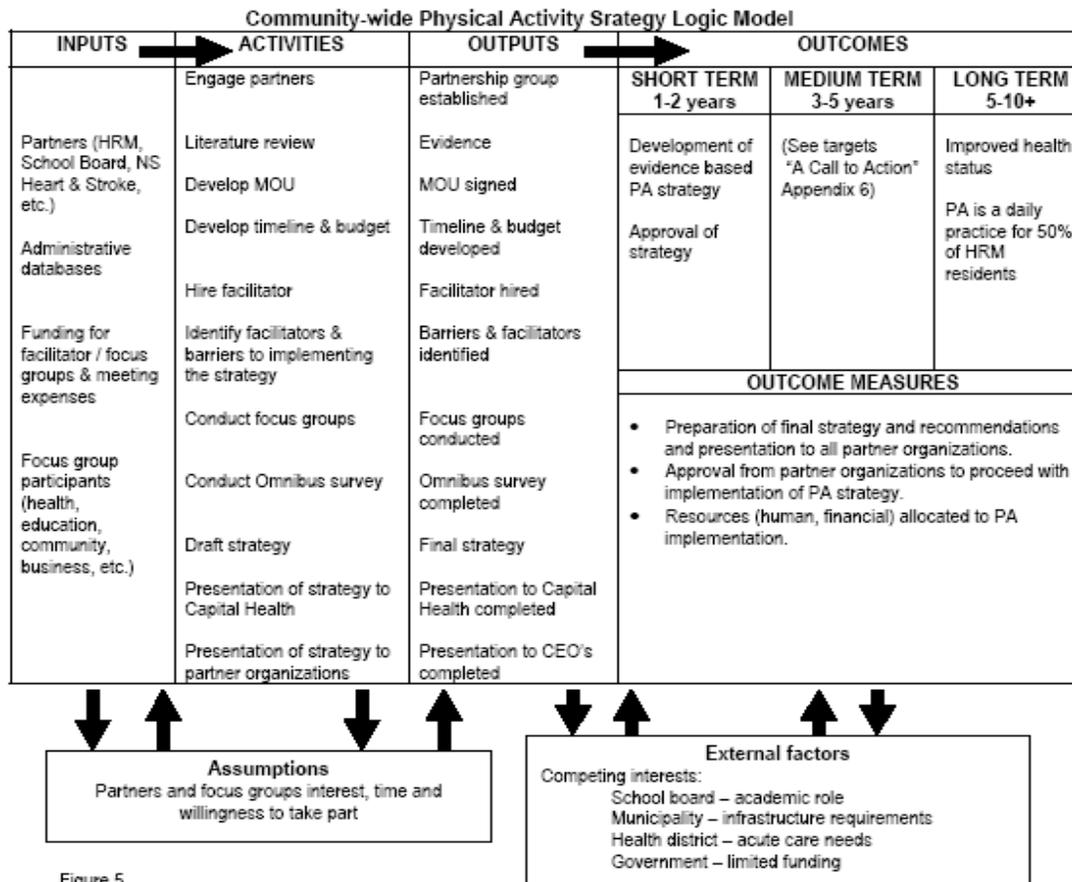


Figure 5

1.4.3 Implementation Plan

Community Health Indicators and Physical Activity Strategy

The implementation plan for the development of evidenced based community health indicators for Capital Health is based on the CIHI work for developing indicators. The implementation plan for the development of the community-wide physical activity strategy is based on the Ontario Ministry of Health Promotion's *Active 2010, Community Physical Activity Planning, A Resource Manual for Communities Preparing Plans*.⁵² Key process steps have been described in detail in section 1.4.2 with reference to the supporting evidence. They will not be repeated here. Rather they are summarized in the tables below.

Community Health Indicator Implementation Plan

Task	Description	Start	End	Complete
Stage One				
Establish Working Group	Identify appropriate working group members	Sept 06		√
Identify what we need to know	Consider emerging health issues & priorities, use four key age groups to guide work (infants & children, youth, adults, seniors)	Oct 06	Jan 07	√
Identify key indicators for each age group	Literature search, environmental scan	Jan 07	May 07	√
Develop selection criteria & indicator specification template	Saskatchewan's criteria for indicator development adapted for use. Capital Health's template adapted for use.	May 07	Aug 07	√
Prioritize indicators	Using modified Delphi process with key stakeholders to gain consensus	Nov 07	Jan 08	√
Validate prioritized indicators	With stakeholders	Jan 08	Feb 08	√
Develop tracking and reporting process	With Decision Support & Quality Planning	Nov 07	Dec 07	√
Present findings	Share results of process with CDHA Board, Executive, organization and Community Health Boards	Jan 08	Feb 08	√
Determine priorities for district action	Responsibility of Population Health Committee & CDHA Board	Jan 08	Ongoing	√

Table 3

Physical Activity Implementation Plan

Task	Description	Start	End	Complete
Stage One				
Manage the Plan	Engage Partners	Nov 06	Dec 06	√
	Develop Partnership Agreement	Dec 06	Apr 07	√
	Develop timeline and draft budget	May 07	June 07	√
Profile the Community	Demographics, patterns/trends of PA	May 07	July 07	√
Learning from Others	Environmental Scan	May 07	July 07	
	Literature Review	Dec 06	June 07	√
Vision/Goals	Develop vision/goal statements	July 07	Aug 07	√
	Develop Logic Model	July 07	Sept 07	√
Objectives/Action Plans	Describe barriers and facilitators to implementing the strategy	July 07	Sept 07	√
Consult with Community	Community Consultation Process	Sept 07	Oct 07	√
Stage 1 Progress Report	Verbal update partner organizations		Oct 07	√
Stage Two				
Physical Activity Strategy	Draft 1; validate with community	Oct 07	Dec 07	√
	Write final report	Dec 07	May 08	√
Stage 2 Progress Report	Update partner organization CEO's		Spring 08	√
Stage Three				
Evaluation/Implementation	Official launch of strategy	Fall 08	Winter 09	
	Develop evaluation framework	2009	ongoing	
	Implement/Measure interventions	2009	ongoing	
	Evaluate interventions and revise strategy	2009	ongoing	
Stage 3 Progress Report	Update partner organization CEO's	2009	ongoing	

Table 4

Measures to Assess Impact of Intervention

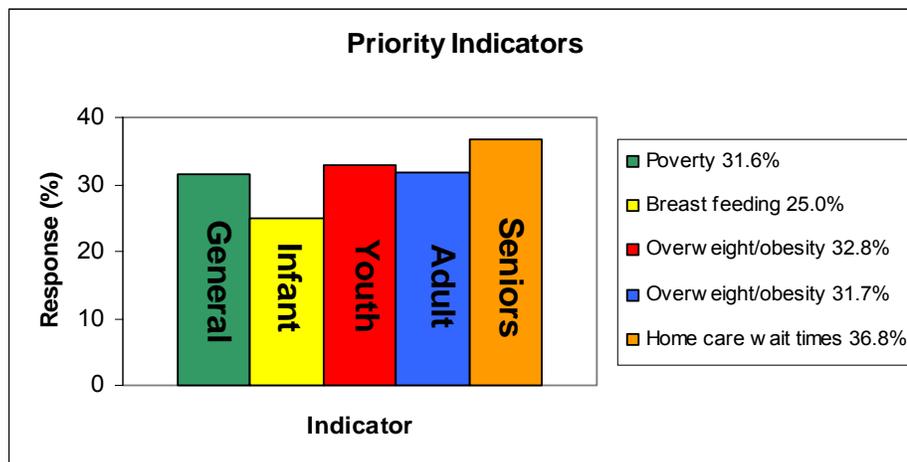
Measures used to determine if the development of evidence informed community health indicators and an evidence informed physical activity strategy were utilized to guide Capital Health's decision-making priorities include:

- review of the new strategic plan to ascertain if measuring population health through evidence-informed indicators is part of the strategic directions,
- documentary review of minutes of meetings (Population Health Committee of the Board, CDHA Board and Executive) to determine if decisions have been made to support measuring community health indicators
- review of the terms of reference of the Quality Committee of the Board and the schedule for indicator presentations to determine if a decision has been made to systematically report community health indicators to the Quality Committee of the board
- examination of the organizational structure and budget statements to determine if resources (financial and human) have been allocated to track and report community health indicators and begin implementation of the physical activity strategy;
- conduct survey and key informant interviews within Capital Health to determine if the evidence-based community health indicators influenced their decision-making;
- review of the indicators chosen for priority action to ascertain if those chosen are those for which there is evidentiary support;
- consultation with organizational partners to the physical activity strategy to determine if approval to begin implementation of the strategy has been received

Results of the above activities will indicate whether the intervention project has the desired impact.

1.4.4 Results

In November, 2007, a list of indicators with a brief questionnaire was sent to key stakeholders (Appendix 3). 38 out of 59 responded (64% response rate). The top priorities for action identified for each group were as follows: GENERAL – percentage of low-income families (32%); INFANT/CHILDREN - percentage of mothers breast feeding on leaving hospital (25%); YOUTH - percentage with BMI>25 (33%); ADULT – percentage with BMI>25 (32%); OVER-65's–home care wait-times (37%). Generally, indicators chosen for priority action were those for which there was good evidence of need as indicated by the data/information provided to the respondents. Respondents showed high scores for knowledge and attitudes on the Likert scales (medians of 4) (Appendix 4). Respondents indicated that the information provided and discussions through QUEST had increased their awareness of the health status of our community and the link between the indicator and health. They also indicated that monitoring and reporting of these indicators to the Board would help guide the Board and organization in its strategic and business decision-making. Unfortunately, there was no baseline data with which to compare these self report scores.



Based on survey results including comments from respondents, the following conclusions are drawn. The use of community health indicators by decision-makers is increased by the following: 1) involvement of those who will use the indicators in their development 2) presentation of evidence linking indicator to health in a managerially useful format – lay language, with a clear link between the research and the management decision in question, 3) wide dissemination.

Additional conclusions: 1) more work is needed to identify appropriate “social” indicators that impact the health of residents within Capital district (e.g. indicators that address diversity or social inclusion issues). Clear definitions of these social indicators need to be developed with the link between indicator and health outcome further defined and evidence of effective interventions to improve the indicators further explored; 2.) in order to identify appropriate environmental indicators Capital Health needs to decide whether they are interested in the impact of the environment on human health or the impact of Capital Health as an organization on the environment or both; 3.) Capital Health is ‘ready’ to begin addressing community health indicators. Key stakeholders responded that monitoring these indicators at the highest level of the organization is important. This is based on the response rate to the questionnaire, its results and the number of requests, from different parts of the organization, to talk about the need for community health indicators.

All indicators will be monitored and reported annually. Improvement efforts are beginning with the indicator of physical inactivity. Effective interventions to improve other indicators will be initiated as part of future business planning processes.

While it is still too early to determine whether the evidence (indicators and physical activity strategy) has been fully utilized to influence decision-making there are early indications that business and strategic planning have been impacted:

- re-allocation of human and financial resources to monitor, track and take action to improve the community health indicators has been supported. Specifically, the Quality/Decision Support areas of Capital Health are in the process of being realigned to monitor community health indicators in addition to acute care indicators. The COO’s 08/09 budget indicates the need for allocation of funding to hire an epidemiologist, an analyst and access to services of a health economist.
Funding has been provided to begin implementation of Capital Health’s part of the community-wide physical activity strategy. Public Health has hired additional staff who will have physical activity as part of their responsibilities. This is a new role for Public Health staff. Partners to the physical activity strategy have allocated \$90,000 to hire staff to support the project.
- measuring population health through evidence-informed indicators is documented as part of the strategic plan (health and wellness and performance excellence sections). The research evidence linking indicator to health outcomes was utilized to inform this strategic decision.
- COO has approved all recommendations regarding monitoring of community health indicators (section 1.4.2 Step 4 Utilization).
- meeting minutes of the Population Health Committee indicate that evidence-based community health indicators have and will be utilized in decision making. The Population Health Committee’s terms of reference are explicit as to the requirement to “review community health indicators to make recommendations regarding priority areas for action.” Decisions made at the highest level of the organization regarding population health issues are to be guided by research evidence. The February, 2007, minutes of the Population Health Committee indicate a motion to support the development of the physical strategy was approved unanimously. This motion was made following a presentation which cited evidence on the need to increase physical activity of Capital Health residents (The Case for a Community-Wide Physical Activity Strategy).
- the terms of reference of the Quality Committee of the Board indicate a practice change; community health indicators will now be part of the monitoring responsibilities of the Committee, as acute care indicators are now monitored.
- access to Ref Works for staff not affiliated with Dalhousie University has been implemented.
- Capital Health’s library is implementing a new system for tracking literature searches.

Summary of Results

The short term objectives of the intervention project (set of community health indicators, system to track them, increased awareness of link between indicator and health, a physical activity strategy) were all achieved within the time allocated.

The medium term objectives (utilization of the indicators, approval by Capital Health of the physical activity strategy) were also achieved.

Given the complexity and relatively long term nature of population health strategies, the achievement of the long-term objectives was not anticipated within the research time line. However, early indications are positive for sustaining the existing changes to achieve the longer term objectives (decrease % of inactive citizens within HRM, improved health status).

Consideration will need to be given to the barriers and facilitators that will enhance or impede sustainability. These will be described in sections below 2.1 Implementation of Change and 4.3 Future Activities.

2. LESSONS LEARNED

2.1. Implementation of Change

The change to be brought about by this intervention project is the utilization of research evidence, related to community health indicators (including physical activity), to inform decision-making at the governance and organizational levels. Introducing this new way of 'doing business' into established patterns of decision-making presents many challenges. Understanding both the facilitators and barriers to implementing change can greatly enhance the success of the change management initiative.

Implementation facilitators and barriers will be described using a process model of change adapted from Reay, Golden-Biddle and Germann,⁵⁸ which describes organizational change as becoming legitimized through small wins and three microprocesses 1) cultivating opportunities for change, 2) fitting a new role into prevailing systems, and 3) proving the value of the new role. This model emphasizes change as a *process* that occurs over time and evolves in nonlinear, often unpredictable ways.

Facilitators

Cultivating Opportunities for Change

Throughout the intervention project several opportunities for change were cultivated to facilitate implementation. These strategic opportunities, according to Reay et al, refer to being alert for situations and events that could be used to introduce and raise the visibility and legitimacy of the change initiative. These "windows of opportunity" may be small where timing and knowledge of the organization can be critical success factors. Having, according to Reay et al, "established networks and intimate knowledge of [the] work environment [allows one] to take a series of personal purposeful actions designed to change established patterns of work". Reay et al, refer to this as 'embeddedness'. As a director within the organization, I took advantage of this 'embeddedness' in the organization to cultivate the following opportunities for change (also described earlier in the document):

-One on one meeting with the new CEO to talk about the need for a population health approach to address chronic disease and in particular the need to base the approach on community health indicator "evidence of need."

-Membership on the newly established Population Health Committee of the Board and an invitation to draft the Committee's terms of reference, this provided opportunity to embed the need for evidence-informed community

health indicators in a document that is used to guide board level decision-making. Membership on this committee also provided opportunity to discuss the importance of linking the evidence of what works (to improve population health) to the activities that the organization undertakes.

-Cultivating the support of leadership at both the Board and executive level was critical in providing a solid foundation for implementing the intervention project.

-Membership on the Health and Healing Promise Council (key group designing the strategic plan), the many consultations held to develop the new strategic plan allowed engagement of others in discussion about the need for both community health indicators and a community-wide physical activity strategy to improve population health.

-Breakfast meeting held for CEO's of partner organizations to sign the memorandum of understanding supporting the development of the physical activity strategy, this provided opportunity to "make the case" for the strategy. Evidence informed messages developed for this meeting targeted partners' various interests (e.g. healthy learners make better learners-school board message).

-Accreditation of Capital Health as a district in November, 2007, a chair of the population health accreditation team this process afforded opportunity to again communicate within the organization the need for evidence-informed population health strategies to improve health status in Nova Scotia.

Additional intervention project facilitators that were cultivated as opportunities for change included:

- the readiness of Halifax Regional Municipality to develop a municipal physical activity plan,
- Halifax Regional School Board's concern over the low physical activity rate within its school population,
- Halifax Chamber of Commerce's publicized concern over high obesity rates of Nova Scotians, high cost of health care and inadequate resources spent on prevention and
- Nova Scotia Heart and Stroke Foundation's top strategic priority identified as the need to increase physical activity in the population.

Use of Existing Structures and Processes

The Reay et al, model of change indicates that fitting the 'new' way into established structures and systems can facilitate change. Blending the tracking and reporting of community health indicators into the roles and responsibilities of staff currently monitoring acute care indicators in Capital Health is in progress. Realignment of existing quality and decision support departments to support the monitoring process is also occurring. Ensuring existing public health staff incorporate physical activity into existing responsibilities will also facilitate sustainability of the change. Building the change into the new strategic plan, "Our Promise" also helps. It indicates that "we are committed to discovering and enacting leading edge, evidence based practices [that include] a feedback loop to ensure population health indicators guide performance excellence within the network" - our organization and community.¹⁵

Proving the Value of the Change

Reay et al, describe proving the value of the change as "attempts to get others, especially professional colleagues, to recognize the value [of the change]." Drawing on knowledge of our own work environments, professional linkages and an understanding of how other health professionals would likely to respond to the change are important facilitators in informing actions designed to prove the value of a change initiative. By virtue of my position as Director, a participant in the strategic planning process and a member of both the quality and population health committees of the board, this 'embeddedness' enabled me to:

- identify colleagues, practitioners, board members etc. who needed to be convinced of the value of identifying and taking action on community health indicators,
- define “value” for each stakeholder group;
- gain access to key groups for presentations and
- identify the best time to involve the physician group

The above actions involved a stakeholder analysis, presentation to key groups and targeted messaging.

Studies also show that proving the value of the change through quick wins can gain support for the change.⁵⁸ Unfortunately, as improvement in population health requires long-term investment, quick wins are unlikely. This barrier was addressed through the creation of shorter term “proxy” indicators for population health improvement. For example, a 10% increase in physical activity rates is the desired outcome. A shorter term indicator, which signifies movement in the desired direction, is the number of community organizations that sign the physical activity charter which outlines organizational commitment to increasing physical activity. The “quick win” barrier also was addressed through presentation and discussion at the Board Committee level regarding the need for multi-year investment before change in population health can be realized. It is recognized that long-term investments are vulnerable to changes in government, leadership and staff turnover. These additional barriers must be addressed to sustain the change.

Barriers

The key barrier in moving the project forward is the competition for resources between the acute care and population health sectors. Acute care practitioners fear that supporting this project may mean a reallocation of scarce resources from acute care to population health initiatives. This is at a time when acute care is being tasked by governments with the responsibility for decreasing wait times. Difficulty in engaging the acute care sector is understandable given these cost pressures and their feeling that their budget should be ‘protected’.

The way in which the current health system is organized with its specialization (disease focus) is a systemic barrier that does not easily lend itself to the integrated, multilevel connections that are required to successfully implement population health initiatives. Other systemic barriers include the lack of “horizontal collaboration across different ministries and sectors of society (public, private, non-profit)” as well as lack of “vertical collaboration” among district, provincial and federal policy levels necessary for successful change.³³

Despite the above mentioned barriers, the board’s approval of the new strategic plan with a focus on maintaining health and wellness provides critical support for project sustainability. This was due to strong community support for moving in this direction, expressed during strategic planning community consultation sessions. Community support encourages political action for policy change. As Capital Health is the largest health district in the province what happens in this district may be a bellwether for the rest of the province. Policy change is an effective way to improve population health. This has been demonstrated with regard to tobacco reduction where government policies such as ad valorem taxes, smoke free public places legislation and advertising bans have been effective in reducing tobacco use.⁵³

With regard to decreasing physical inactivity, research evidence, promising practice and local contextual information indicate that policy change could play a role in improving this indicator. Such policies could include mandatory daily physical activity in schools, tax incentives for enrolling in activity programs, free access for community to school gyms, policy that guarantees the opportunity for every child in HRM to learn to swim and skate, guidelines that support physically active built environments, adoption of new policies that support active transportation including reduced traffic speeds, expanded bike racks and trail development. See Appendix 2 for further policy related strategies (e.g. involving schools, community health boards and behaviour change models of intervention).

With regard to gaining approval for implementation of the community-wide physical activity strategy, barriers included the following competing interests of the partner organizations: School board – academic demands; Municipality- infrastructure demands; government- acute care demands. These competing interests were addressed in three ways: 1) clearly identifying the benefits of the strategy for each organization, 2) development of strategic action plans that build on existing structures and processes within the partner organizations as opposed to creating new parallel structures and processes, 3) planned communications to each partner organization individually with targeted messages.

Lessons Learned

An important lesson learned throughout the implementation of the intervention project was that effecting change requires one to 'sell the idea'. With the many competing demands being faced by healthcare executives today the benefits accruing from the change must be 'sold' – that is clearly articulated and relevant to current management decisions. This requires seeking first to understand before seeking understanding. When one understands the opposition's agenda and concerns one can more clearly articulate how supporting the proposed change can benefit both parties. There is no better substitute for doing this than one to one communication with key decision makers. Such face to face communication builds relationships and trust both keys to building commitment . It is the commitment to change (valuing a population health approach) not compliance that should be sought. Discussion of the research evidence can be a powerful tool in helping achieve this.

The following are additional lessons learned:

Shifting organizational culture from an acute care focus to one that also values the population health approach requires leadership from the bottom and from the top; it requires gaining commitment as opposed to compliance and this requires ongoing dialogue over time.

Identifying community health indicators is the first step in the successful implementation of a population health approach. However, monitoring these indicators alone will not improve health status. It is taking action to improve these indicators through effective interventions that will. In addition, there must be organizational readiness for the action to be successful.

Identifying champions at the highest level of the organization (e.g. Chair, Population Health Committee of the Board) early in the change process can assist in running interference and providing a clear path for implementation of the change.

Timelines are important in managing change initiatives. However, they need to be flexible as most change initiatives are not linear. Timelines for the development of both community health indicators and physical activity strategy changed several times to accommodate new information and external conditions.

Obtaining public endorsement of the change initiative, from executive leadership (CEOs), is important in gaining commitment of organizations to implement and sustain change.

To be useful to decision-makers research evidence must be provided when it is needed (timely in relation to the decision being made) and how it is needed (concise, lay language, easy to read format, applicability to the decision clear). The final package of community health indicator information was much smaller and easier to read than the original package developed.

Responsibility for utilization of research evidence is a 'two way street'; both producer and user must take responsibility (individual and corporate investment is required).

Speak to the authors of the research you are using. This can provide 'behind the scenes' information on why an intervention worked or did not.

The effective use of strategic moments is a critical success factor in influencing change. As windows of opportunity often are small and may open unexpectedly, it is wise to have all preparatory work (evidence, fact sheets, business case) completed early and ready to present on short notice. (CEO breakfast meeting arranged quickly but business case was ready, waiting for that 'window of opportunity')

There is considerable evidence supporting the health benefits of physical activity. There is strong evidence, as defined by the CDC, to support community-wide campaigns to increase physical activity in the population. However, there is little published evidence of Canadian communities that have increased physical activity levels within their population (Saskatoon being the exception). Results of the effectiveness of this physical activity strategy will assist in filling this research gap.

Addressing physical inactivity requires partners outside the traditional healthcare sector. No one organization or group can do this alone.

The development of effective partnerships requires time. To successfully engage partners, the benefits for each partner must be clearly stated at the beginning of the project.

The key limiting factor in utilization of research evidence related to population health strategies is the competing forces of the acute care sector. The key in addressing this is to develop an understanding, throughout the organization, that the decision is not whether to resource acute care or population health but rather how to attain a balance in resourcing both.

3. DISSEMINATION

The intervention project has been shared with many stakeholders throughout the organization including Board members, Executive and Council of Chairs (co-chairs of each of the seven Community Health Boards within Capital Health). As the intent of the project is to develop community health indicators to guide decision-making at the organizational level as well as the governance level it will be necessary to ensure all care teams and community health board members within the district are briefed regarding the application of community health indicators to their areas of work. Requests have been received from other districts within the province to share the project with their organizations.

The community-wide physical activity strategy was developed to initiate action to improve the indicator of physical inactivity. This strategy has been shared with the seven partner organizations. In addition, it was shared with all Nova Scotia municipalities to assist them in developing their own physical activity plans. This was done through the provincial department of Health Promotion and Protection who is assisting these municipalities.

A presentation was made at the 2008 conference in Toronto entitled Forging Ahead... Evidence to Innovation, hosted by Saint Elizabeth Health Care. A poster was presented at the 2008 Canadian Public Health Association Conference. An article is being prepared for submission to the Journal of Chronic Disease in Canada.

4. IMPLICATIONS

4.1. For Decision Makers & Other Audiences:

This intervention project has provided quality indicators to monitor system planning and performance related to population health improvement. These indicators and the process for determining them may be helpful to other district health authorities. Also helpful may be the detailed example provided regarding how to improve one particular indicator – that of physical inactivity.

District health authorities are legislated to “improve the health of their communities.” The boards of district health authorities make decisions based on information provided to them. Providing Boards of Directors with evidence of the link between community health indicators and health outcomes, and the need for ‘upstream’, multi-level, multi-sectoral action, as demonstrated through this intervention project, has implications for a range of actions for district boards. These actions include:

- selection of population health priorities for action,
- reallocation of budget from acute care to population health
- reassessing skill mix needed to take action to improve the indicators(e.g., epidemiologist, health economist, analyst, public health personnel with expertise in physical activity)
- identification of key areas for advocacy
- determining areas for innovation and research related to population health (evaluation of effective interventions to increase physical activity in the district)
- shifting organizational culture to include valuing a population approach to health

At the board and executive level, building capacity for evidence-informed decision making related to population health has implications for business and strategic planning. It can assist an organization to better determine where and how to allocate resources. The evidence helps identify the areas of greatest need and where interventions are likely to be successful. The identification of population health priorities for action enables focused action by the organization enabling greater impact.

This project has implications beyond the district level by providing evidence for the districts and community health boards to advocate for further provincial investment in policies and practices that reduce social, economic and health inequalities. Ultimately, a scorecard or ‘dashboard’ on community health indicators will be available to the community, permitting transparency and accountability. It will assist the community in gaining a better understanding of the health of their community.

Identifying what contributes to a healthy community is still not well understood by district health authorities. Researchers may be interested in implementing and evaluating population health initiatives for which there is no current data or evidence of effective interventions. This will add to the body of knowledge in this area.

The community-wide physical activity strategy will have implications for all municipalities within the province of Nova Scotia. Sharing of this strategy with others, in particular the literature review and evidence-informed action plans will reduce the time and cost for these municipalities to develop their own physical activity plans. This will be done through the Department of Health Promotion and Protection.

At a population health level, the implications, in the long run, should be improved health status, which will help abate the demand for acute care.

4.2. Future Activities

Within the literature there is a high failure rate up to 70% of organizational change.⁴⁹Therefore, careful consideration needs to be given to strategies to sustain the implemented change. The NHS’s Institute for Innovation and Improvement has developed a sustainability model to assist in this regard. The three components of this model, (organizational, staff and process) will be used to describe the strategies for sustaining the change brought about by this intervention project.

Organizational Component

The organizational component refers to the fit of the intervention project with the organization’s strategic aims, culture and infrastructure. Utilization of community health indicators to guide priorities aligns well with the organization’s new strategic directions. The culture is shifting to one that values a population health approach. However, infrastructure

in terms of technology and personnel to take action to improve the indicators will need to be amended. Aligning roles and position descriptions of staff to reflect more emphasis on prevention and primary health care is required.

Staff Component

Key Board, Executive, administrative and clinical leaders have been involved in various phases of the intervention project and have given time to help ensure that changes are sustained. However, engagement of front line staff and the community at large will further enhance sustainability. Plans to do this are under way through the establishment of the Citizenship Promise Council whose mandate is to develop a culture of 'involvement' of both staff and community. Gaining support and understanding from the community for the change will help influence political direction.

Process Component

The process component of NHS's sustainability model focuses on the credibility of the evidence, benefits of the initiative beyond helping patients, adaptability of the improved process and effectiveness of the system to monitor progress. The evidence is clear as to the need to identify and act on community health indicators to improve population health. The benefits of such an approach go beyond helping individual patients, to decreasing the burden of disease on the population, to creating viable communities. These are, however, long-term impacts. Organizational and political leadership may change several times before these long-term impacts are realized. To mitigate this it will be important to develop a communication strategy so that the reason for this initiative and progress is kept front and center for government, organizational CEOs, health care providers and the community. As a start, a partnership has been initiated with GPI Atlantic to launch GPI's Headline Indicators project. Sustainability will require the continuation and evolution of the monitoring system put in place as part of the intervention project. Additional support of an epidemiologist (currently being sought) to analyze population health trends will enhance the sustainability of this initiative. Action to improve individual indicators such as the implementation of the physical activity strategy, will require financial resources. Public private partnerships and research grants are strategies being considered to fund initial stages. Such funding strategies would allow time for results (proven success) to be generated, often a prerequisite for government funding. Contact with a private insurance company to explore funding of the physical activity strategy has been made. Application to Capital Health's 'Innovation Fund' is also planned. Presenting the initiative as a return on investment would be helpful. In addition, aligning actions with provincial and national priorities will also help sustainability.

The NHS describes sustainability "as when new ways of working and improved outcomes become the norm... holding the gains and evolving as required."⁴⁹ It is hoped that through the above strategies community health indicators will continue to be utilized to guide Capital Health's decision-making. Hopefully, the gains made through this intervention project will hold and evolve.

5. CONCLUSION

Fundamental to developing healthy communities is understanding what contributes to good health and measuring it. For district health authorities this means going 'upstream' and utilizing a set of community health indicators to guide decision making. This project provides a process that other district health authorities could follow to develop and prioritize community health indicators relevant to their own community. The development of the physical activity strategy provides a model of how to take action to improve one of the indicators. Such improvement action is critical as monitoring indicators alone will not improve health status.

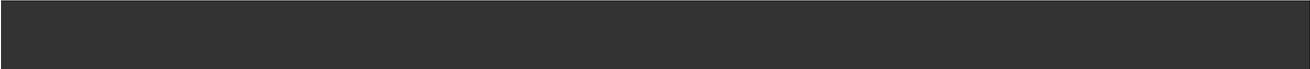
Shifting organizational culture from an acute care focus to one that also values the population health approach requires leadership, organizational readiness, and champions. Most importantly, it requires the ability to "sell the idea" that such a change will, in the long run, improve the health of our citizens. To this end, effective use of the research evidence (timely, relevant, easy to read) is a powerful tool in gaining commitment to the change.

Appendix 1

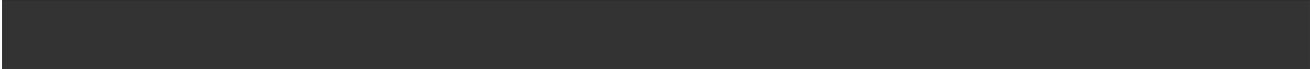
INDICATOR WORKSHEET

Complete this worksheet to help others understand what you are measuring.

Team	
Date	
Title	
Quality Dimension	
Descriptor	
Definition	
Rationale for Choosing Measure	
Numerator	
Denominator	
Target	
Rationale for Target	
Data Source(s)	
Data Collection Procedure	
Reporting Responsibility	
Reporting Frequency	
Comments	



A Call to Action for Our Community:
**Physical Activity Strategy for
Halifax Regional Municipality**



July 3, 2008

EXECUTIVE SUMMARY

The Physical Activity Strategy for Halifax Regional Municipality (HRM) is a call to action to address the serious problems associated with physical inactivity.

Dangerously low levels of physical activity in HRM have been repeatedly documented and the negative health, social, economic and environmental impacts are well known. Physical inactivity must be addressed through a coordinated and collective community response. Creative initiatives in many areas are required, including new programs, improved policies and practices, increased awareness and supportive built and social environments.

The HRM Physical Activity Strategy responds to this challenge with:

- Over 60 action plans to enhance awareness, secure the commitment of community partners and establish supportive social, built and natural environments.
- Initiatives selected for HRM; and in most cases proven successful elsewhere.
- Clear priorities and Lead Agencies to support the implementation of the action plans.
- Physical activity targets for 2013 to track the success of the strategy.
- An ongoing commitment to research, monitoring and evaluation to continually update and improve the strategy.
- An implementation approach to secure resources, build partnerships and establish an ongoing governance structure.

The Physical Activity Strategy charts a clear course for the future that will correct the serious problems associated with physical inactivity in HRM. To succeed, community organizations and agencies throughout HRM must respond to this call for action, embrace the strategy and actively participate in its implementation.

HRM PHYSICAL ACTIVITY STRATEGY GOALS

1. Awareness and Commitment

To ensure HRM residents and community leaders are aware of the benefits and opportunities of physical activity and embrace it as an essential part of daily life.

2. Supportive Environments

To provide inclusive opportunities for HRM residents to increase levels of physical activity.

3. Community Built and Natural Environments

To create and maintain built and natural environments and infrastructure which support and inspire HRM residents to be active in all aspects of their daily life.

4. Leadership and Accountability

To ensure community organizations, and public, private and non-profit agencies work in partnership to continually plan, improve, implement, and evaluate, this sustainable, long-term physical activity strategy.



INCREASED PHYSICAL ACTIVITY



Indicators of Success		Base-line	2013
1	Percentage of population aged 20+ who accumulate 30-60 minutes of at least moderate intensity physical activity, 5 days per week	50%	60%
2	Percentage of junior high age youth who meet the daily 60 minute standard of moderate to vigorous activity Boys Girls	45% 24%	55% 34%
3	Older adults 65+ who accumulate 30-60 minutes of at least moderate intensity physical activity most days of the week	31%	41%
4	Population 20+ who report walking to work, school or errands at least 6-10 hours per week	32%	42%



A HEALTHIER COMMUNITY

INTRODUCTION

On April 30, 2007, seven organizations came together to declare their interest and commitment to improve the physical activity levels of residents in Halifax Regional Municipality. Over the next fourteen months, representatives from these key stakeholders met to research best practices, assess community assets, dialogue with community partners, and review their work with national and local experts. The result of this collaborative effort is the document you are holding – A Call to Action for Our Community: A Physical Activity Strategy for HRM.

The authors of the Physical Activity Strategy for HRM are:

- Capital District Health Authority
- Community Health and Epidemiology, Dalhousie University
- Halifax Regional Municipality
- Halifax Regional School Board
- Heart and Stroke Foundation of Nova Scotia
- IWK Health Centre
- Nova Scotia Health Promotion and Protection

This strategy is comprehensive, and offers a community-wide approach to increasing the physical activity levels of all our residents – young and old. Our collective goal is to create a cultural shift – from a community where only one half of our citizens engage in physical activity to one where there is a vibrant and supportive community infrastructure that enables everyone to incorporate active living into all aspects of their daily lives. Together, let's bring to life the words of George Bernard Shaw:

We do not cease to play because we grow old;
we grow old because we cease to play.

THE CASE FOR A COMPREHENSIVE PHYSICAL ACTIVITY STRATEGY FOR HRM

The prevalence of physical inactivity is a public health crisis among all population groups. Only half of adult Nova Scotians report enough daily physical activity, 30 – 60 minutes 5 days per week according to Canada’s Guide to Physical Activity, to achieve optimal health benefits. Among NS youth, less than 1 in 10 Grade 11 students accumulate objectively measured 60 minutes of moderate to vigorous physical activity on a daily basis. (see Appendix B for a profile of Physical Activity in Nova Scotia)

Increased physical activity would mean a reduction in the high rates of chronic disease in Nova Scotia. This would improve quality of life and mean significant potential savings in health care costs.

Creating an activity-friendly community has impact beyond health benefits. Some of these are:

- Lower green house gas emissions and traffic congestion if people walk or cycle more.
- Safer communities with more people out with eyes on the streets
- Developed infrastructure for walking, biking, and sports, which attracts visitors and creates jobs.
- Active healthy people reporting reduced absenteeism from work.
- Active older adults who are less at risk for falls and hip fractures and more likely to live independently.

A comprehensive strategy is more likely to be effective because the actions to increase population levels of activity would include initiatives at the individual, interpersonal, organizational and societal levels. A comprehensive strategy will also identify areas of gaps and duplication, where to allocate resources and help ensure diverse government and non-government organizations work together. . Based on a community-wide strategy, individual organizations can decide on their unique role and how they can make the most effective contribution.

Target Groups

The inactive population in HRM is the primary target group for this strategy. This sedentary group accumulates less than 30 – 60 minutes of activity per day. Optimal health benefits are achieved by getting 30 – 60, or more, minutes of moderate physical activity per day.

Population data identifies two specific groups, which require both extra attention and modified approaches.

1. The Physical Activity Levels of Children and Youth (PACY) study has identified junior and senior high school aged youth as particularly inactive with activity rates dropping substantially between 2002 and 2006. The study suggests girls, in particular, are at greater risk. Less than one percent of Grade 11 girls accumulate 60 minutes of moderate to vigorous physical activity on five days of the week.
2. The 2005 Canadian Community Health Survey found that 69% of adults aged 65 and over self reported less than 15 minutes of physical activity per day. This study found women to be less active than men.

These target groups will require focused attention across all actions implemented in the strategy. In particular, community partners that serve these groups will be asked to assist with interventions.

Physical activity also has a significant role to play in helping to address the health disparities faced by a number of populations in HRM and in Canada. These include, but are not limited to, visible and ethnic minorities, people with disabilities, and those living in poverty.

As the strategy is implemented, attention will need to focus on the barriers that prevent access to physical activity opportunities, as well as the design of policies, programs and services required to overcome these barriers.

A PROFILE OF OUR COMMUNITY

Demographic Profile

- Encompassing more than 5,500 sq. km., an area larger than Prince Edward Island, Halifax Regional Municipality (HRM) is comprised of more than 200 communities, from major urban centres to rural communities and seaside villages.
- HRM is one of the fastest growing municipalities in Nova Scotia; in 2006, its 372,810 residents represented an 8.7% increase in population since 1996.
- The community's age structure is comparable to national averages, with about 22.7% below the age of 20, and 12.1% over the age of 65. As with most Canadian communities, the proportion of older adults will continue to grow.
- Families with fewer children and an increasing proportion of lone-parent families in HRM are also reflective of national trends.
- In 2006, Halifax was home to about 180 different ethnic origins. An estimated 7.5% of Halifax's population, 27,600 people, belonged to a visible minority group. While this proportion was below the national level of 16.2%, it was higher than any other census metropolitan areas in the Atlantic region, and up from 7.0% in 2001.

Health Profile

Physical inactivity is a well established modifiable risk factor for a variety of chronic diseases and obesity.¹⁵ These conditions are highly prevalent in HRM and Nova Scotia, and include cancers, cardiovascular diseases, certain mental health conditions, arthritis and other musculoskeletal conditions, respiratory diseases, endocrine disorders such as diabetes, and obesity (Appendix B and D).

- Nineteen percent of the population in HRM is classified as obese, signifying an alarmingly high body mass index (BMI is a ratio of weight to height) that predisposes individuals to a variety of ailments.²⁹
- Only 45% of the population is in the recommended range for BMI.²⁹
- A significant proportion of the HRM population suffers from diabetes – 5% of the population, as estimated by the Canadian Diabetes Association and confirmed by self-report of diabetes in over 17 000 residents of HRM during the Canadian Community Health Survey in 2005.^{6, 29}
- Cancers and cardiovascular diseases continue to cause the highest mortality rates in Nova Scotia, and the highest burden of hospitalizations within HRM.²¹
- Over 36% of deaths in Nova Scotia are caused by cardiovascular diseases, including coronary artery disease and complications of hypertension, while 30% are caused by cancers.²¹
- Nova Scotia currently has the second highest incidence of cancer in Canada, surpassed only by PEI.²⁴
- The death rate in Nova Scotia continues to be higher than the national average and those of Quebec, Ontario, Alberta, Saskatchewan, and British Columbia.²⁵ The risk of death from cardiovascular diseases and all causes, and the incidence of cardiovascular illness and a variety of cancers, has been shown over many decades to be reduced by regular participation in physical activity.¹⁵

Current Physical Activity Initiatives

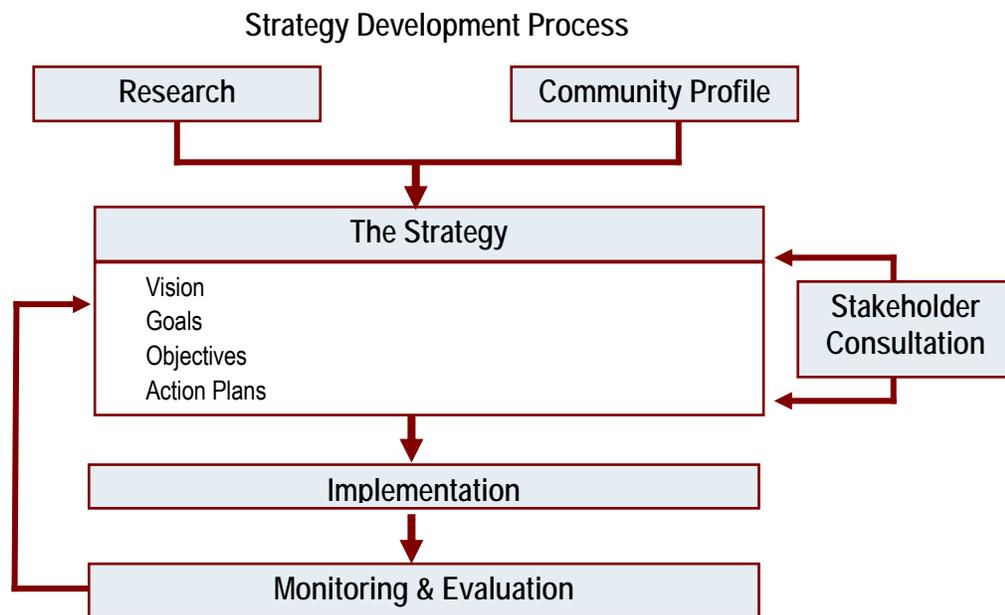
The Physical Activity Strategy Committee (PASC) prepared an inventory of local, provincial and national physical activity initiatives, strategies, and organizations that influence physical activity within HRM (Appendix D). Although not exhaustive, the list demonstrates the wide range of groups and organizations currently contributing to a more active HRM. These initiatives have helped shape the development of the Physical Activity Strategy, as a central principle of the Physical Activity Strategy is to build upon existing infrastructure, programs and services. The strategy complements, but does not duplicate, the initiatives noted in Appendix D.

STRATEGY DEVELOPMENT

In Fall 2006, a core group of organizations met to discuss the need for preventive action to address an increasing prevalence of chronic disease and high levels of physical inactivity. The group decided a comprehensive, multi-sectoral approach to increasing physical activity within HRM was required.

In April 2007, the following organizations publicly endorsed a memorandum of understanding^a to support the development of a comprehensive physical activity strategy for residents of HRM: Capital Health, Halifax Regional School Board, Halifax Regional Municipality, Nova Scotia Health Promotion and Protection, IWK Health Centre, Heart and Stroke Foundation of Nova Scotia, and Community Health and Epidemiology, Dalhousie University^b. Individuals from these Core Organizations were represented on the Physical Activity Strategy Committee (PASC) and were the principal authors of this strategy^c. In addition, dmA Planning and Management Services was hired to facilitate the strategy development process and support the writing of the final document.

The following figure outlines the strategy development process:



The core components of the Physical Activity Strategy - the Vision, Goals, Objectives and Action Plans - were formulated based on research, a community profile and stakeholder consultation. They are supported by action plans and an implementation, monitoring and evaluation approach.

^a A copy of the Memorandum of Understanding is included in Appendix C.

^b These seven organizations, that were parties to the Memorandum of Understanding, are referred to as the Core Organizations in this document.

^c PASC members are identified in Appendix A

Early in the preparation of the strategy, the Physical Activity Strategy Committee (PASC) reviewed research on physical activity (Appendix I) and prepared a community profile highlighting relevant characteristics of HRM (Appendix D).

The PASC developed the Vision, Goals, Objectives and Action Plans with input from five Review Groups that were consulted at three points throughout the development process^d. Review Group participants were drawn from a wide range of organizations and agencies concerned with physical activity levels in HRM^e. The Review Groups met to discuss barriers to physical activity, potential target groups, key initiatives and partnerships (Appendix F). The draft Vision, Goals and Objectives were reviewed at a second meeting. The Review Groups also commented on the draft Action Plans. In addition to the Review Group meetings, the PASC commissioned a representative survey of HRM residents. (Appendix G).

The PASC's approach to implementation, monitoring and evaluation is described in pages 54 – 56 of the report.

^d Review Groups were organized to represent various areas of interest, as follows: (1) Health (2) Business (3) Physical Environment/Municipal (4) Community (5) Education

^e See Appendix E for a list of the agencies and organizations that were invited to send representatives to the Review Groups.

VISION

HRM is a **leader** among Canadian municipalities, taking full advantage of its **natural setting** and unique features to create active communities. Physical activity is a core component of our cultural identity. All residents value and are inspired to make **physical activity a key part of their daily lives**. HRM communities provide inviting and safe environments that make **physical activity the easy choice** at home, work, school and play. Supporting daily physical activity is a **shared responsibility** among community organizations, and public, profit and non-profit agencies. These organizations and agencies continually search for **innovative ways** to realize the social, economic, environmental, health and educational **benefits of a physically active community**.

GOALS AND OBJECTIVES

The Physical Activity Strategy includes the following Goals and Objectives. The Action Plans associated with these Goals and Objectives are discussed in the next section of the report.

Goal One: AWARENESS AND COMMITMENT

To ensure HRM residents and community leaders are aware of the benefits and opportunities of physical activity and embrace it as an essential part of daily life.

Objective 1A: To provide information that supports, and motivates HRM residents to adopt physically active lifestyles.

Objective 1B: To expand the skills and commitment required by leaders in health, sport, recreation and education to support people in becoming more active.

Goal Two: SUPPORTIVE ENVIRONMENTS

To provide inclusive opportunities for HRM residents to increase levels of physical activity.

Objective 2A: To expand opportunities for informal, unorganized physical activity in the lives of HRM residents.

Objective 2B: To encourage organizations to increase access to formal, quality programs that target physically inactive people with accessible activities of interest.

Objective 2C: To encourage the public and private sector to adopt policies and practices that will create a workplace environment that supports physical activity.

Goal Three: COMMUNITY BUILT AND NATURAL ENVIRONMENTS

To create and maintain built and natural environments and infrastructure which support and inspire HRM residents to be active in all aspects of their daily life.

Objective 3A: To adopt planning practices and policies that support physical activity in the planning, design and development of the built environment.

Objective 3B: To enable people to walk and wheel both as a leisure activity and as a method of getting from place to place.

Objective 3C: To maximize HRM residents' access to all community facilities which support increased levels of physical activity.

Goal Four: LEADERSHIP AND ACCOUNTABILITY

To ensure community organizations, and public, private and non-profit agencies work in partnership to continually plan, improve, implement, and evaluate, this sustainable, long-term physical activity strategy.

Objective 4A: To build the leadership, partnerships and stable funding required to implement this long-term physical activity strategy.

Objective 4B: To undertake evaluation and research that will continually improve this physical activity strategy.

ACTION PLANS

Action plans for each of the strategy's Goals and Objectives describe key initiatives which need to be undertaken in the next 5 years in order to achieve the Vision of a physically active community. In the following tables, the PASC has identified priority action plans that can be implemented in the short-term.

The Physical Activity Strategy is a community-wide initiative requiring the active involvement of a wide range of community agencies, organizations and interests. Champions must emerge and play a significant role in the implementation of the action plans. For the purposes of this report, the Core Organizations that were instrumental in the development of the strategy, and were parties to the Memorandum of Understanding for the strategy's development, have been designated as *Lead Agencies*. As Lead Agencies, they will assume responsibility for promoting the action plans, identifying and encouraging others to play an active role, and monitoring progress with implementation. Others, however, may assume primary responsibility for the action plans, including securing the staff and other resources required for implementation. While the Core Organizations are the only Lead Agencies identified in this report, additional Lead Agencies will be identified in the future. Lead Agencies in this report are identified as follows:

Capital District Health Authority	-	CDHA
Community Health & Epidemiology, Dalhousie University	-	CH&E
Halifax Regional Municipality	-	HRM
Halifax Regional School Board	-	HRSB
Heart and Stroke Foundation of Nova Scotia	-	HSFNS
IWK Health Centre	-	IWK
Nova Scotia Health Promotion and Protection	-	HPP

Finally, many of the Action Plans are supported by research. A reference number following an action plan identifies a study or article in the Bibliography (Appendix I) with information on the effectiveness of the proposed action plan.

AWARENESS AND COMMITMENT

GOALS AND OBJECTIVES

Goal 1

To ensure HRM residents and community leaders are aware of the benefits and opportunities of physical activity and embrace it as an essential part of daily life.

Overview:

Social marketing and communication strategies will inform, educate and motivate with entertaining messages and opportunities that are relevant to the community. A distinct brand will be established, and residents will be able to easily access information on physical activity from a single source. Local media will be encouraged to incorporate physical activity messages into their daily communication and support public service announcements. By encouraging agencies to incorporate a physical activity message into their communication material, the strategy's message will reach all sectors of the community.

New tools will help agencies motivate those they work with to adopt physically active lives. Elected officials and leaders in the health, education, sport and recreation sector will be encouraged to more prominently reflect physical activity in education, training and professional development.

Objective 1A	Action Plan	Lead Agency	Short Term (⇄)
To provide information that supports, and motivates HRM residents to adopt physically active lifestyles.	Engage the media as independent and active partners in the dissemination of the physical activity message ²⁸	CH/IWK	
	Develop a physical activity information portal to promote existing physical activity opportunities and resources	HSFNS/HRM	
	Prepare improved signage, mapping and other information on safe walking routes, trails and other physical activity resources ²⁸	HRM	
	Explore elements of a comprehensive social marketing campaign, in addition to those noted above, to establish a brand, promote physical activity and enable people to take action ¹⁷	CH/IWK	⇄
	Work with a wide range of community agencies to include a physical activity message in communication materials developed for other purposes ¹⁷	CH/IWK	
	Publicize and encourage agencies and organizations to endorse the HRM Physical Activity Strategy. ²⁸	CH/IWK	⇄
	Encourage agencies to prepare and publicize a physical activity charter to publicly demonstrate their commitment to and support for physical activity	CH/IWK	

Objective 1B	Action Plan	Lead Agency	Short Term (◇)
To expand the skills and commitment of leaders in health, sport, recreation and education to support people to become more active.	Develop and disseminate tool kits to support skill building for behaviour change that is broadly applicable to staff, volunteers and other leaders in the health, education, sport, recreation and other sectors. ²⁸	HPP	
	Provide advice and assistance to community agencies developing physical activity programs.	HPP/HRM	◇
	Develop educational programs and resources on evidence-informed interventions for professional staff in primary health care, physical education, leisure services, transportation, community planning and others as appropriate. ¹⁷	HPP	
	Sponsor an annual forum to build capacity and introduce best practices among physical activity practitioners and other professionals that can support physical activity initiatives. ²⁸	HPP	◇
	Review post secondary training for sport, recreation, health and education professionals to ensure that the priority attached to physical activity is enhanced	TBD	
	Inform employers about core skills and knowledge required by volunteer and paid staff who plan and/or lead programs that support health enhancing physical activity.	HPP	◇
	Create a champion program to enhance the profile of physical activity and its benefits.	CH/IWK	◇
	Engage elected officials to implement policy and allocate resources to support physical activity in HRM.	HSFNS	

SUPPORTIVE SOCIAL ENVIRONMENTS

GOALS AND OBJECTIVES

Goal 2

To provide inclusive opportunities for HRM residents to increase levels of physical activity.

Overview:

Supportive social environments will provide informal and formal opportunities for physical activity in HRM neighbourhoods, schools and workplaces, and greater access to all community resources. While expanded special events and programming will contribute to increased physical activity, it will also be the easy choice in everyone's day-to-day activities. A daily routine of physical activity will be encouraged by offering rentals of bicycles and other equipment, active living maps, prompts and other resources as an accepted part of the community landscape.

Special emphasis will be placed on physical activity in school, and students will be encouraged to take a lead role in determining and designing activities that interest them. Schools will be a key focus for physical activity with new policies, programs and approaches designed to engage physically inactive youth. Workplace physical activity will be addressed with incentives for both employer and employee, certification programs and social marketing.

Finally, community agencies will be encouraged to make physical activity a central part of their mandate and operations. They will be encouraged to adopt policies which demonstrate their commitment to physical activity and they will be provided with tools which help them evaluate their current situation, and plan and implement new and improved physical activity strategies.

Objective 2A	Action Plan	Lead Agency	Short Term (◇)
To expand opportunities for informal, unorganized physical activity in the lives of HRM residents	Promote the inclusion of physical activity in special events. ¹⁷	HRM	
	Expand the use of "prompts" in a wide range of settings where they can successfully increase physical activity. ¹⁷	CH/IWK	◇
	Identify and promote physical activity opportunities that do not require registration, advanced skills or other commitments (eg. Drop in programs, neighbourhood pick up games).	HRM/HRSB	
	Identify and promote outdoor opportunities for active play. ²⁷	HRM/HRSB	
	Develop and promote equipment lending programs that encourage physical activity opportunities	HRM/HRSB	
	Develop a program to replace screen time with physical activity. ^{1,19}	IWK	◇
Explore the feasibility of a bike borrowing program in HRM to increase active transportation.	CH/IWK	◇	

Objective 2B	Action Plan	Lead Agency	Short Term (◇)
<p>To encourage organizations to increase access to formal, quality programs that target physically inactive people with accessible activities of interest</p>	<p>Develop criteria for and promote designation of an “active” school.</p> <p>Develop a school/community plan to address barriers restricting students from participating in extracurricular programs.</p> <p>Develop a business case for quality daily physical education in the school system.</p> <p>Develop a strategy for mandatory daily physical activity in schools.¹¹</p> <p>In addition to actions noted above, expand opportunities for increasing levels of physical activity in the school setting.¹⁷</p> <p>Identify and promote incentives to encourage organizations and corporations to support physical activity.</p> <p>Develop a reward and recognition program for organizations and corporations who support physical activity.</p> <p>Develop physical activity audits to help organizations and corporations plan, implement and evaluate their physical activity strategies.</p> <p>Encourage day care/child care and family resource centres to adopt policies concerning their commitment to and provision of physical activities.¹¹</p> <p>Encourage home visiting programs to include a physical activity component.</p> <p>Develop a system that links physically inactive patients to sport, recreation and physical activity programs in the community.²⁸</p> <p>Develop a policy that guarantees the opportunity for every child in HRM to learn to swim and skate.</p>	<p>HRSB</p> <p>HRSB</p> <p>HRSB</p> <p>HRSB</p> <p>HRSB</p> <p>HSFNS</p> <p>HSFNS</p> <p>HSFNS</p> <p>HPP</p> <p>IWK/CH</p> <p>CH/IWK</p> <p>HRM</p>	<p>◇</p> <p>◇</p> <p></p> <p></p> <p></p> <p></p> <p></p> <p></p> <p></p> <p>◇</p> <p></p>
Objective 2C	Action Plan	Lead Agency	Short Term (◇)
<p>To encourage the public and private sector to adopt policies and practices that will create a workplace environment that supports physical activity</p>	<p>Identify and disseminate tools and resources to workplaces that promote physical activity.²⁸</p> <p>Develop workplace active living maps showing opportunities for physical activity in the vicinity of workplaces in major HRM employment areas.¹⁷</p>	<p>HPP</p> <p>HRM/CH</p>	<p></p> <p>◇</p>

COMMUNITY BUILT AND NATURAL ENVIRONMENTS

GOALS AND OBJECTIVES

Goal 3

To create and maintain built and natural environments and infrastructure which support and inspire HRM residents to be active in all aspects of their daily life.

Overview:

Communities will be created for physical activity through improved planning and design and coordination among all agencies responsible for built and natural environments. Safe, accessible and inviting pathways will encourage residents to walk or wheel for recreation and for transportation. New and expanded environments will be available for walking and wheeling, and parts of the community will be trialed as non-motorized areas. Professionals who plan and develop HRM communities will be guided by new policies and incentives for creating physically active environments, and those that excel will be recognized and rewarded.

Objective 3A	Action Plan	Lead Agency	Short Term (◇)
To adopt planning practices and policies that support physical activity in the planning, design and development of the built environment ²⁸	Ensure representatives from sport, recreation, health and education participate in major planning studies for the built environment to provide input that can maximize opportunities for physical activity.	HRM	◇
	Support land use planning policies and implementation strategies that ensure schools, transit stations, business, residential, recreation and commercial areas in HRM are linked by sidewalks, trails and paths.	HRM	◇
	Ensure the adoption of policies and practices to enhance the attractiveness, accessibility and safety of all physical activity venues (trails, stairwells, facilities, bike paths, sidewalks)	HRM	
	Develop a program for communities, individuals, developers and businesses that recognize excellence in providing environments that support physical activity.	HSFNS	
	Complete continuous trails and boardwalks around the Halifax Harbour, as feasible, to capitalize upon this unique environment for physical activity.	HRM	◇
	Develop and promote building and community design guidelines that support physically active communities and built environments.	HPP	
	Encourage mixed land uses so that people can walk and wheel to work or school and to facilities and services that would otherwise only be accessible with vehicles.	HRM/HPP	
	Support sidewalk friendly retail to encourage residents to walk for errands, child care, leisure, and shopping (i.e. Doors and attractions to the shops are directly accessed from the sidewalk).	HRM	
	Support street engineering standards and changes to facilitate walking and wheeling and for the use of streets as social spaces.	HRM	
	Provide street trees for shade to protect citizens from ultraviolet rays, create a “channel for nature” and encourage walking and wheeling.	HRM	

Objective 3B	Action Plan	Lead Agency	Short Term (◇)
To enable people to walk and wheel as a leisure activity and as a method of getting from place to place	<p>Pursue the “pedestrianization” of streets (e.g. wider sidewalks) with a future view towards establishing pedestrian only right of ways.</p> <p>Adopt new policies to support active transportation and cycling including reduced traffic speeds, expanded bike racks, and expanded trail development.^{16, 28}</p> <p>Create strategies to encourage people to use active transportation corridors, including trails, sidewalks, walkways, pathways and bicycle facilities.</p> <p>Pilot street closures for individual and family recreation use.</p> <p>Promote and increase the number of walking initiatives across HRM.</p>	<p>HRM</p> <p>HRM</p> <p>HRM/HSFNS</p> <p>HRM</p> <p>HSFNS</p>	<p></p> <p></p> <p>◇</p> <p>◇</p> <p>◇</p>
Objective 3C	Action Plan	Lead Agency	Short Term (◇)
To maximize HRM residents’ access to all community facilities that can support increased levels of physical activity.	<p>Expand the current Service Exchange Agreement between HRM and HRSB to achieve increased access to junior highs and high schools during evening prime time²⁸</p> <p>Develop clauses within the Service Exchange Agreement between HRM and HRSB pertaining to increased weekend bookings and custodial time at no cost to the user (as per the Citadel High Joint Use Agreement).²⁸</p> <p>Encourage HRM and HRSB to improve affordability and access to schools for not for profit community groups.²⁸</p> <p>Address barriers associated with school access and liability insurance for not for profit groups and sport associations.</p> <p>Identify under utilized facilities for physical activity and develop agreements to facilitate public use.</p> <p>Support the ongoing assessment of sport and recreation facilities to ensure an appropriate infrastructure to support physical activity.</p> <p>Develop a municipal facility allocation policy that addresses the need for more time in recreation facilities for effective programs for the physically inactive.</p> <p>Investigate opportunities to introduce the physically inactive to sport as part of a municipal sport policy.</p>	<p>HRM/HRSB</p> <p>HRM/HRSB</p> <p>HRM/HRSB</p> <p>HRSB/HPP</p> <p>HRM</p> <p>HRM</p> <p>HRM</p> <p>HRM</p>	<p></p> <p></p> <p>◇</p> <p>◇</p> <p></p> <p></p> <p>◇</p> <p>◇</p>

LEADERSHIP AND ACCOUNTABILITY

GOALS AND OBJECTIVES

Goal 4

To ensure community organizations, and public, private and non-profit agencies work in partnership to continually plan, implement, evaluate and improve this sustainable, long-term physical activity strategy.

Overview:

Implementation, evaluation and continuous improvement are critical components of the Physical Activity Strategy. Implementation depends upon secure sources of funding, dedicated staff, an effective governance structure, creative approaches to secure funding, and community engagement to build effective partnerships and recruit new leaders.

The evidence-based approach used to develop the strategy will govern its implementation. In association with research leaders in HRM, the strategy will be continually evaluated and updated. Evaluation will address both the implementation of the action plans and their impact on physical activity levels in HRM relative to the targets established for the strategy. In addition, the strategy will continue to rely on the literature, future research and best practices as action plans are updated.

Objective 4A	Action Plan	Lead Agency ^f	Short Term (◇)
To build the leadership, partnerships and stable funding to implement this long term physical activity strategy.	Create a governance structure with representation from the Core Organizations and others as appropriate to be responsible for the physical activity strategy.	Governance Body	◇
	Recruit new partners and create agreements to allow them to assume responsibility for the implementation of action plans ^{27,28}	Governance Body	◇
	Explore a number of options, including sponsorships and endowments to secure stable, ongoing funding to manage the physical activity strategy	Governance Body	◇
	Prepare an ongoing communication strategy to report on success with implementation and the results of ongoing research and evaluation.	Governance Body	◇

^f Unlike the other action plans where a Core Organization is identified as the Lead Agency, for Goal 4 the actions will be the responsibility of the Governance Body that will be established to oversee the implementation of the strategy.

Objective 4B	Action Plan	Lead Agency	Short Term (◇)
To undertake evaluation and research that will continually improve this physical activity strategy.	Review annual operational plans and make adjustments as required.	Governance Body	◇
	Create, in partnership with local Universities and other agencies, a research and evaluation team with the skills, expertise and commitment to continuously evaluate and improve the physical activity strategy	Governance Body	◇
	Ensure processes are in place so that those responsible for the physical activity strategy are familiar with best practices and research in other jurisdictions and use this evidence to update and improve the strategy	Governance Body	◇
	Monitor success in meeting the community-wide targets for physical activity that were adopted for this strategy.	Governance Body	◇
	Commission research in action plan areas where there is insufficient evidence of effective interventions for increasing physical activity.	Governance Body	◇

IMPLEMENTATION OF THE STRATEGY

Guiding Principles for Strategy Implementation

The Physical Activity Strategy Committee (PASC) recognizes that implementation of the Physical Activity Strategy will be a significant challenge. The following principles and approach will be adopted to ensure widespread support and successful implementation.

Existing Assets: To the greatest extent possible, the strategy will rely on infrastructure, programs and services currently in place. New initiatives will be closely aligned with existing ones. Community leaders will be invited to participate in all levels of the implementation process. This will be a shared responsibility among those that support the principles of the strategy.

Diversity: Diversity is a combination of differences and similarities among people. More than race, sexual orientation, language, gender or any other descriptive category, diversity means understanding and utilizing different views, ideas, life experiences, skills and knowledge. The actions of the strategy will identify and work to eliminate barriers to accessing physical activity opportunities for people with diverse needs and for those facing geographic barriers to service delivery.

Evidence Informed: The strategy will be knowledge based and emphasize interventions that work. The strategy will focus on the “population health approach” and will be based on research and best practices while combining local needs and community assets.

Partnerships: The strategy will encourage a collaborative effort among community agencies, government and non-government partners. The implementation will be a consultative and engaging process based on input from many sectors.

Comprehensive: The strategy will adopt a multi-faceted approach to address social marketing, policy development, physical and social environments, community mobilization, programs and practices. This will increase both structured and unstructured opportunities for physical activity for HRM residents.

Co-ordination: This strategy will be coordinated to the greatest extent possible with other regional plans.

Target Groups: Although the strategy will involve all HRM residents, special attention and resources will be directed to youth and older adults.

Citizen Engagement: HRM residents will be involved in the design, development and delivery of physical activity initiatives.

Evaluation: The strategy will be regularly monitored, evaluated and updated. Current trends and effective policies and practices will be included as warranted.

MEASURING SUCCESS

Improved Levels of Physical Activity – Indicators of Success

The goal of the Physical Activity Strategy is to achieve a measurable improvement in the physical activity levels of HRM residents, specifically the levels within the strategy’s target groups. Indicators of success have been identified, and targets have been set so changes in physical activity levels within each target group can be monitored (see table below).

Indicators have not been established for all of the strategy’s goals and objectives. The initial indicators of success will be expanded in the future. It is also anticipated that indicators of success will be adopted to monitor individual action plans during implementation (e.g., monitoring kilometers of trail added; number of patients advised about physical activity by a health professional; agencies signing the physical activity charter, etc.). Also, because this strategy is based on the principle of gender equity, the long-term objective is to have boys and girls achieving the same (significantly improved) level of physical activity.

While a 10% improvement in physical activity levels by 2013 is an ambitious target based on experiences in other jurisdictions, it reflects the importance placed on short-term improvements in HRM physical activity levels. It is also important to note that the achieving a 10% improvement does not mean the job is done. As with tobacco reduction, it will take long term sustainable efforts and resources to make a population impact.

Indicators of Success		2008	2013	Data Source
1.	Increase percentage of population aged 20+ who accumulate 30 – 60 minutes of moderate intensity physical activity, 5 days per week	50%	60%	Canadian Community Health Survey 2005. Custom tabulation prepared by NS Dept of Health
2.	Increase percentage of junior high age youth who meet the daily 60 minute standard of moderate to vigorous activity Boys Girls	45% 24%	55% 34%	Physical Activity Levels and Dietary Intake of Children and Youth In the Province of Nova Scotia. Available at http://www.gov.ns.ca/hpp/repPub/PACY_2005_Report.pdf
3.	Older adults 65+ who accumulate 30 – 60 minutes of at least moderate intensity physical activity, most days of the week	31%	41%	Canadian Community Health Survey 2005. Custom tabulation prepared by NS Dept of Health
4.	Population 20+ who report walking to work, school or errands at least 6 – 10 hours per week	32%	42%	Canadian Community Health Survey 2005. Custom tabulation prepared by NS Dept of Health

Ongoing Evaluation and Monitoring

Ongoing evaluation and improvement of the Physical Activity Strategy is critical and will be pursued through three related activities.

1. Annual Operational Plans

Annual operational plans will be prepared to set performance objectives and monitor the implementation of the action plans. A formal implementation structure with dedicated staff and resources will work with existing community agencies to implement this strategy. An annual operational plan will outline available resources and the commitments of community partners and will include a timetable, budget, responsibilities, and anticipated outcomes for action plans.

2. Monitoring National, Provincial and Local Trends

Success in meeting the targets for the strategy will be determined by monitoring local trends and national and provincial studies dealing with physical activity (such as PACY, the Canadian Community Health Survey, CFRLI Physical Activity Monitor, and other studies that may be commissioned in HRM).

3. Selected Research Studies

Research will be undertaken in selected areas in the Physical Activity Strategy. These studies, to be undertaken in conjunction with the research community, will provide an in-depth assessment of specific action plans and contribute to the larger national and international body of literature addressing physical activity. Research topics will be determined on an ongoing basis and undertaken as resources permit.

NEXT STEPS

As stated in Implementation of the Strategy (pg 55), planning will begin immediately following the launch of the Physical Activity Strategy. With the support of the Core Organizations, the PASC will act as a transition team to help develop a formal governance structure for implementation.

The following steps will be addressed:

- Establish an implementation governance structure.
- Secure start-up funding which includes funding from Core Organizations in addition to other partners. Estimated costs would be approximately \$85,000 in the first year (staffing plus operations). In-kind contributions from a Lead Agency are expected for office space, computer and phone costs.
- Hire a project manager and administrative support.
- Establish a year one operational plan.
- Establish an evaluation team and develop an evaluation framework

It is anticipated that these tasks can be accomplished within six months of the launch and will create the necessary structure and support required to begin work on the strategy.



**Appendix A: Members of the Physical Activity Steering
Committee (PASC)**



Physical Activity Steering Committee

Name	Title	Organization
Michael Arthur	Manager, Physical Activity	Nova Scotia Health Promotion & Protection
Dr. Chris Blanchard	Associate Professor Canadian Research Chair	Dalhousie University, Dept. of Medicine, Capital Health, Centre for Clinical Research
Leslie Anne Campbell	Coordinator/Analyst	Health Outcomes Research Unit, Capital Health
Anne Cogdon	Executive Director, Primary Health	IWK Health Centre
Carol Davis-Jamieson	Regional Representative Physical Activity, Sport and Recreation	Nova Scotia Health Promotion & Protection
Diana Dibblee	Facilitator, Health Promotion	Halifax Regional School Board
Michelle LeDrew	Manager, Health Promotion	Public Health Services, Capital Health
Kathy MacKinnon	Area Coordinator, Community Recreation Services	Halifax Regional Municipality
Karen MacTavish	General Manager, Community Recreation Services	Halifax Regional Municipality
Gabrielle Riley	Active Living Coordinator, Community Recreation Services	Halifax Regional Municipality
Mary Russell	Director, Community Health	Capital Health (Chair)
Elaine Shelton	Director of Health Promotion	Heart & Stroke Foundation of Nova Scotia
Tina Tucker	Acting Director of Health Promotion	Heart & Stroke Foundation of Nova Scotia
Gaynor Watson-Creed	Medical Officer of Health	Public Health Services, Capital Health, Nova Scotia Health Promotion & Protection



Appendix B: A Profile of Physical Activity in Nova Scotia



A Profile of Physical Activity in Nova Scotia

Prepared by Dr Angie Thompson, Department of Human Kinetics, St Francis Xavier University and Ms Leah Mochrie, BSc, Kinesiology. St FX

What is physical activity? Do all levels of physical activity have health benefits?

Physical activity is defined as “any bodily movement produced by the body’s muscles that causes the expenditure of energy” (22, p. 2). In other words, physical activity includes actions that people make that burn or consume calories. Physical activity includes all forms of exercise (i.e., specific training usually done to improve one or more components of physical fitness), active transportation (i.e., walking, cycling, skateboarding, or scootering), sport, active work (i.e., moving boxes, delivering mail, etc.), and active leisure activities such as gardening, playing catch, etc. .

Since physical activity is an all encompassing term, it is necessary to clarify what level provides health benefits. Physical and mental health benefits result from taking part in physical activities that are of light, moderate, and vigorous intensity. The time and frequency needed to get these health benefits varies dependent upon the intensity of the physical activity (as indicated in the table below, [13]). Further, these health benefits can be obtained by accumulating several 10-minute bouts of participation. Finally, various combinations of physical activities, including intensities can be combined for healthy, active living.

	Light	Moderate	Vigorous
Time	60 minutes	30 minutes	20 to 30 minutes
Frequency	7 days/week	5 or more days per week	3 days per week
Examples	light walking easy gardening stretching	brisk walking cycling swimming dancing	jogging basketball fast swimming fast dancing

For older adults (65+ yrs), the recommendations are to “accumulate 30 to 60 minutes of moderate [intensity] physical activity most days [of the week]” (14).

The recommendations for children (5-9 yrs) and youth (10-14 yrs) are to add 30 minutes of vigorous intensity and 60 minutes of moderate intensity physical activities each day as well as reduce non-active or sedentary time by 90 minutes each day (15, 16).

The health, social, economic and environmental benefits of physical activity for all populations

It is now widely accepted that being physically active on a regular basis has many health benefits for individuals across the age spectrum (i.e., for young and old).

Children and Adolescents

Benefits of physical activity for children and adolescents (4) include:

- (a) healthy growth and development of the musculoskeletal and cardiorespiratory systems,
- (b) maintenance of a healthy energy balance, and therefore a healthy weight and body composition,
- (c) reduced risk for coronary heart disease because of a reduced risk for high blood pressure and an abnormal blood lipid profile (3),
- (d) maximization of bone development thus reducing risk for osteoporosis later in life, and
- (e) opportunity for social interaction, achievement, and mental well-being.

Further benefits are believed to include improved concentration, cognitive functioning, and academic achievement (23) as well as a reduced risk for smoking and consuming alcohol or illegal drugs. Recent research with adolescents indicates that regular participation in vigorous-intensity physical activity or on a sports team was related to a reduced likelihood of seriously thinking of or planning for suicide (boys only) or attempting suicide (6).

Adults (including older adults)

It is widely recognized that regular physical activity is related to quality and quantity of life in adults. Participating in regular physical activity reduces the risk of a number of acute and chronic diseases including colds, the flu, coronary heart disease, stroke, high blood pressure, type 2 diabetes, some types of cancer, osteoporosis, osteoarthritis, low back pain, and obesity. It is also believed that regular physical activity improves sleep (not necessarily quantity, but quality), relaxation, mood, and self esteem, and reduces stress, anxiety, depression and mental illnesses such as Alzheimer's and dementia.

Further, maintaining a physically active lifestyle over the age of 50 years may be increasingly important in avoiding, reducing, or reversing the physical, mental, and social deterioration that often comes with age (18). Other benefits of regular physical activity specific to the elderly population include the maintenance of independent living, reduced risk of falls, less loneliness and isolation (and therefore reduced depression), and fewer complications from immobility (5).

From a health care perspective, engaging in regular physical activity has economic benefits as well. It is estimated that the economic burden of physical inactivity in the Canadian population is \$5.3 billion or 2.6% of total health care costs in 2001 (17). Further it is estimated that physical inactivity contributes to approximately nine percent of all premature deaths in Canada.

Environmental benefits to engaging in a physically active lifestyle have only recently been brought to the forefront. An obvious benefit from engaging in active forms of transportation is reduced greenhouse gas emissions. Less obvious benefits relate to the aesthetics of the physical environment when walking and/or cycling trails and green spaces are created to facilitate leisure time physical activity and active modes of transportation.

Physical activity levels of Nova Scotians (Canadians where data on Nova Scotia does not exist)

Children and Adolescents

In Nova Scotia, sufficient physical activity for optimal growth and development is defined as 60 minutes or more of moderate or more intense physical activity on five or more days of the week in children and adolescents (8, 9). The percentage of boys and girls in grades 3, 7, and 11 meeting these criteria in 2001 and 2005 are presented in the tables below. There were no regional differences within the Province.

2001	Grade 3	Grade 7	Grade 11
Boys	90.0%	62.2%	12.6%
Girls	92.3%	44.5%	6.9%

2005	Grade 3	Grade 7	Grade 11
Boys	96.7%	45.3%	9.7%
Girls	96.1%	23.8%	< 1%

As identified previously, Health Canada (15, 16) recommends that children and youth increase the time they currently spend in physical activity by adding 30 minutes of vigorous intensity and 60 minutes of moderate intensity physical activities each day as well as reduce their non-active time by 90 minutes each day. If these criteria were used in the studies mentioned above, only one or two students would actually meet the recommendation.

Furthermore, it should be pointed out that the current UK guidelines for children and adolescent's physical activity of at least 60 minutes per day of moderate or more intense physical activity were not enough to prevent the clustering of risk factors for cardiovascular disease (i.e., high blood pressure, high blood fats [triglycerides, total cholesterol/HDL ratio], insulin resistance, high levels of body fat as measured by sum of four skinfolds, and poor physical fitness) in children and adolescents (2). In fact, 88 minutes of moderate and vigorous intensity physical activity were needed to reduce risk for cardiovascular disease in 15 year old adolescents, while 116 minutes were needed for 9 year old children.

One form of physical activity that has decreased over recent years in children and youth is active transportation. This is evidenced by the number of children currently driven or bussed to schools. In the most recent PACY study, it was noted that more than 90% of the students in Grades 3, 7, and 11 took the bus, were driven or drove themselves to school (9). One reason often cited for the decrease in "active" commutes to school is the increase in distance that has to be traveled. Another common reason cited is the "safety" of the path the students must travel including the availability of sidewalks.

Adults

As previously indicated, Health Canada's (13) recommendations for adults' physical activity for optimal health benefits are dependent upon the intensity of physical activity. The most recent data (2005) suggest that 48% of Canadians ages 12 or older were inactive in their *leisure time* (12). Women were more likely to be classified as inactive compared to men. Inactivity increases with age with 57% (62.5% women, 49.8% men) of Canadians 65 years and older classified as inactive. Further, 25% of Canadians reported that they sit most of the day. Further, in an average week, 41% of Canadians reported that they spend less than one-hour walking to work/school or to do errands.

In the study previously mentioned, inactive was defined as obtaining less than the equivalent of 30 minutes of moderate intensity physical activity per day (12). Moderately active was defined as obtaining between 30 and 60 minutes of moderate intensity physical activity each day. Active was defined as obtained 60 or more minutes of physical activity of at least moderate intensity each day.

Specific to *active transportation* (i.e., walking 6 or more hours per week to work, school, or errands; or cycling) walking is far more common with approximately 23% of Canadian males and females (ages 15+ years) actively engaged (7). Cycling is less common with only 9% of men and 5% of women using this mode of active transportation regularly. The percentage of Canadians using these two forms of active transportation increased from 2000/01 to 2005.

In Nova Scotia, more than 50% of the adult population (ages 12 and older) are considered inactive in their leisure time (21). This is significantly greater than the national average. Urban Nova Scotians are more likely to be considered active or moderately active compared to the adults that live in rural Nova Scotia. When the specific District Health Authorities (DHAs) are considered, adults living in DHA 9 (i.e., Capital) 52% are classified as active or moderately active which is significantly more active than the average Nova Scotian (49.2%). Further individuals living in DHA 7 (i.e., Strait) are less active than the average Nova Scotian.

Predictors of physical activity

In discussing predictors of physical activity, it is important to clarify the type of physical activity considered since the predictors for active transportation may be different than the predictors for leisure physical activities. Further, it is necessary to identify what types of physical activity were included in the analysis (work-related, leisure, exercise, transportation, etc.). Finally, given that socioeconomic status is often a determinant examined as a potential predictor of physical activity, there must be clarity in identifying how it was determined since, in Canada, it can be measured individually or collectively as income, education, or occupation.

Children and Adolescents

A recent review of the correlates of physical activity and sedentariness in youth based on 57 previously published peer-reviewed papers (25), identified sex (male), self efficacy, parent physical activity (for boys), and parent support as positively related to physical activity for children (4-12 yrs). In other words, boys are more likely to be physically active than girls, particularly when their parents are physically active too. The more confidence with participating

physical activity and the more support received from parents also related to higher levels of physical activity participation for boys and girls. Although a cause and effect relationship cannot be identified between children's physical activity levels and parental support or role modeling, it is nonetheless considered prudent to suggest increasing parental support and role modeling of a physically active lifestyle as an effective measure of promoting physical activity in children.

For boys and girls (4-12 yrs) there were no other variables that related to or predicted their level of physical activity. Specifically, there were no significant associations found for age, ethnicity, BMI or skinfolds, single parent status, or parent education (24). Further, no significant associations were found for the psychological correlates self-perception, enjoyment, or barriers to physical activity. In regards to the environment, no significant associations were found between perceived access to facilities, perceived access to play space, or for perceived access to sporting and/or fitness equipment in the home.

For adolescents (13-18 yrs), sex (male), parent education, attitude, self efficacy, goal orientation/motivation, physical education/school sports, family influences, and friend support were positively associated with physical activity (25). This means that adolescent boys are more active than adolescent girls. Further, boys' and girls' level of physical activity was greater when their parents had a higher level of education, they had a positive attitude towards physical activity, they had a stronger belief in the ability to be physically active, they participated in physical education and sport programs, they were goal oriented, and had positive family and friend influences.

No significant relationships were noted for age, ethnicity, BMI or skinfolds, or other measures of socioeconomic status in regards to physical activity participation (25). Further, no significant relationships were found for the following psychological correlates of physical activity: intention, perceived benefits, perceived barriers, self-perception, sport competence, fun/enjoyment, and depression. There also was no significant relationship between parents' and adolescents' level of physical activity. In regards to the environment, there was no relationship found between availability and proximity to sports facilities and physical activity participation.

In regards to sedentary behaviours in adolescents, ethnicity (Caucasian), socioeconomic status, and parent education were inversely associated in adolescents (25). In other words, lower levels of sedentary behaviour were found in adolescents who were Caucasian, of higher socioeconomic status, and with better educated parents. Males were also more likely to engage in greater amounts of sedentary behaviours such as television and video games. BMI and depression were positively associated with watching television and playing video games. In other words, a higher BMI and greater levels of depression were found in those who watching more TV or played more video games.

Other research (24) indicates that "having a friend to exercise with" was the most helpful cue to becoming involved in physical activity for boys and girls in grades 9 thru 12. Further, females, more so than males found "encouragement from friends" to be an important cue for physical activity. In this study, "parental encouragement" and "having a parent who exercises" were also helpful cues for physical activity.

Although physical appearance tends to be a primary motivator for engaging in physical activity for adolescent boys and girls, they indicate different specific reasons for their participation. (24) Adolescent girls indicate they are physically active to “staying in shape” and for “weight loss”; while adolescent boys indicate “becoming strong” and “staying in shape”.

Another way to describe physical activity participation in children and youth and what relates to it, is to discuss their real and perceived barriers. In the 2005-06 PACY study (9), the students in Grades 3, 7, and 11 indicated yes or no to a serious of items following “I would like to be physically active, but “. The percentages who responded “yes” are listed in the table below.

The top three barriers identified by the students in Grade 3 were: cost, lack of equipment, and school work. The top three barriers identified by the students in Grade 7 were: school work, I don’t have someone to go with, and cost. For the students in Grade 11, school work, I don’t have someone to go with, and it is too far away were the top three barriers identified.

	Grade 3	Grade 3	Grade 7	Grade 7	Grade 11	Grade 11
	Boys	Girls	Boys	Girls	Boys	Girls
It is too expensive	16.5	24.1	22.0	24.3	20.4	26.7
I don’t have any equipment	14.4	19.7	20.6	23.2	24.3	27.2
Too much schoolwork	15.7	13.5	30.7	37.0	41.4	52.6
No one to go with	13.1	15.5	24.3	37.0	30.3	39.5
It is too far away	12.3	15.8	22.3	23.9	24.3	27.7
The weather is bad	15.7	11.6	27.8	29.1	31.9	28.0
I don’t have a place to go to	12.9	13.5	17.2	18.6	17.8	22.4
I am scared to go out at night	8.2	11.3	3.2	8.6	1.0	4.3
Sickness or injury stops me	5.1	4.9	21.2	22.4	18.8	24.2
I don’t know how	3.9	4.4	7.0	9.3	4.6	7.3
I sweat too much	5.1	3.0	0.6	6.0	3.3	4.8
It is too risky or dangerous	4.9	3.0	9.6	9.5	3.3	4.3
I am not allowed	3.1	3.2	15.3	8.4	5.6	4.3
Parents don’t encourage me	1.8	3.7	9.9	7.4	3.3	4.0
It is not fun anymore	2.3	2.0	6.7	9.3	7.9	7.3
Not interested	2.8	1.5	4.3	4.1	5.3	5.0
My girl friends prevent me	n/a	n/a	2.9	1.0	4.6	0
My boy friends prevent me	n/a	n/a	0.3	2.4	0	5.3
My friends prevent me	n/a	n/a	3.5	7.2	2.3	3.3
My job prevents me						
Use of drugs or alcohol prevents me	n/a	n/a	0.3	0.5	1.6	1.8
Smoking prevents me	n/a	n/a	0	0.7	1.6	5.8

Adults

In Canada, men are more active than women and physical activity levels decline with age (12). *Leisure time* physical activity was less prevalent among people in lower income groups compared with the highest income group. Immigrants, regardless of how long in Canada were

least likely to be physically active in their leisure time. Further, seasons relate to physical activity level in adults (ages 19+ years). Quite simply put, Canadians are more physically active in the summer compared to the winter (19). Another factor unique to Canada relates to an East-to-West gradient in leisure time physical activity (12). Generally, Canadians living in the Western part of Canada (i.e., Ontario, Alberta, British Columbia, and Yukon) are more physically active than those living in the East (i.e., New Brunswick, Nova Scotia, Newfoundland, Prince Edward Island, Quebec, Nunavut, Manitoba, and Saskatchewan). Further, residents of big cities (i.e., populations of 2 million+) were less physically active in their leisure time than the national average. This may be partly explained by the high percentage of immigrants living in these cities.

Some of the predictors for physical activity in Canadian adults are similar for Nova Scotians, i.e., men are more active than women and physical activity declines with age. Others are not, particularly rural-urban and socioeconomic differences in levels of physical activity. As previously mentioned, when the DHAs in Nova Scotia are considered, the most active Nova Scotians reside in the capital region (i.e., DHA 9) and the least active reside in the strait region (i.e., DHA 7). Further, individuals in the lowest and highest income bracket in Nova Scotia and particularly in DHA 9 had the fewest residents classified as physically inactive. As expected, a gradient from the lower-middle to highest income bracket is seen (i.e., that as income increases, fewer residents are classified as physically inactive). It is possible that in the lowest income bracket, more active modes of transportation are used, in fact, that may be the only source of transportation for this group of individuals.

Specific to *active modes of transportation* (7), the determinants of cycling are: age (younger more likely), being single and going to school. Education and income were determinants in males only with the most educated and lowest incomes the most likely to cycle. Immigrants, regardless of sex, were less likely to cycle. Specific to walking as a mode of transportation, individuals with lower incomes were most likely to walk. Similarly, students were most likely to use walking as a form of transportation. Nova Scotia residents are more likely than Canadians overall to *strongly agree* that general safety concerns, volume of traffic, and poorly lit sidewalks and streets prevented them from walking and cycling (11).

In a study of young adult women (ages 18 to 32 years), 74% indicated lack of motivation as a somewhat important or important perceived barrier for their participation in physical activity, exercise or sport (1). Time was indicated by 58% of the same and not being able to find physical activity facilities that are inexpensive was reported by 51% of these young women.

In middle-aged office workers (18), obtaining recommended levels of physical activity (i.e., 150 minutes of moderate and/or vigorous intensity physical activity per week) was least common in those working full time (i.e., ≥ 30 hours per week), higher in those working part time (< 30 hours per week), and highest in those not working at all. Further, individuals classified at a lower grade for their occupation were less likely to meet the recommended minutes of physical activity each week.

Another way to look at the predictors of physical activity is to examine the barriers perceived. The table below (10) summarizes the percentage of Canadian adults who consider the listed barriers as important or somewhat important:

		Percent	Type of Barrier
Major Barriers			
	Lack of time	69	Individual
	Lack of energy	59	Individual
	Lack of motivation	52	Individual
Moderate Barriers			
	Excessive cost	37	Individual
	Illness/injury	36	Individual
	Lack of facilities nearby	30	Environment
	Feeling uncomfortable	29	Individual
	Lack of skill	29	Individual
	Fear of injury	26	Individual
Minor Barriers			
	Lack of safe places	24	Environment
	Lack of child care	23	Environment
	Lack of a partner	21	Environment
	Insufficient programs	19	Environment
	Lack of support	18	Environment
	Lack of transportation	17	Environment

Interestingly enough, physically active Canadians experience these barriers too, but generally to a lesser extent. Further, women tend to note these barriers at a higher percentage as males. When age is considered, the top three identified barriers to physical activity participation are the same – time, energy, and motivation. The question then becomes more of managing existing barriers such that they do not limit or hinder physical activity participation.

How important is physical inactivity as a risk factor?

When considering heart disease, physical inactivity is the modifiable primary risk factor that exists at the highest rate. More specifically, it is estimated that high blood pressure, high blood fats, and smoking each influence about 20% of the Canadian population whereas physical inactivity influences almost half the population. Thus, it makes sense from a health perspective to address the sedentariness of the population given the number of people affected by it. When considering all types of cancer, it is estimated that tobacco use is related to 31% of all diagnoses (20). Physical activity has been found to reduce the risk of colon cancer by 50%, breast cancer by 30 to 40% and other cancers (such as prostate, ovarian, endometrial, lung, testis, and kidney) to a lesser extent. So once again, it makes sense to promote physical activity given the effectiveness it has on preventing cancer and the number of people currently living relatively inactive lives. It is believed that 90% of all type 2 diabetes diagnoses could be prevented if adults (and children and youth) engaged in 30 minutes or more of moderate intensity physical activity each day combined with a healthy dietary intake. Finally, it is estimated that if all Canadians engaged in the recommended level of physical activity that one-third of all deaths related to coronary heart disease, one quarter of deaths related to stroke, one-fifth of deaths related to colon cancer, one-fifth of death related to type 2 diabetes, one-seventh of deaths related to breast

cancer, one-fifth of deaths related to hypertension and one-quarter of deaths related to osteoporosis could be prevented (26). Furthermore, it should be pointed out that the greatest health benefits are realized when a person moves from being inactive to becoming moderately physically active (26). Further benefits are achieved as individuals obtain even higher levels of physical activity participation with a ceiling effect eventually reached. Thus, it is prudent from a health perspective to focus physical activity promotion efforts on those who are least active in the population.



Appendix C: Memorandum of Understanding



Physical Activity Partnership Memorandum of Understanding

Purpose

This Memorandum of Understanding will constitute guidelines for a partnership of parties who commit to developing a comprehensive, community wide physical activity strategy to increase the number of Halifax Regional Municipality (HRM) residents incorporating active living into their daily lives.

Need

Physical inactivity is an independent risk factor that contributes to high rates of chronic disease. Self reported data from the Canadian Community Health Survey (CCHS) for age 12 + indicate that nearly half of HRM residents are inactive while at the same time average body mass index (BMI) scores are increasing.

The provincial Physical Activity Levels of Children and Youth (PACY) Study, shows low rates of activity, especially for adolescents. For example, only 9.7% of grade 11 girls accumulate 60 minutes of moderate or vigorous activity on at least 5 days of the week. The Public Health Agency of Canada recommends that children and youth should accumulate up to 90 minutes of physical activity per day.

As noted in a 2004 report for the Nova Scotia Heart & Stroke Foundation, physical activity provides proven health benefits.¹

It protects against heart disease, stroke, hypertension, type 2 diabetes, colon cancer, breast cancer, osteoporosis, obesity, depression, anxiety, and stress. Evidence indicates that in HRM 30% of heart disease, 22% of osteoporosis, 16% of stroke, hypertension, type 2 diabetes, and colon cancer, and 9% of breast cancer are attributable to physical inactivity.

Regular physical activity also improves behavioural development in children and adolescents and helps maintain function and preserve independence in older adults. Studies show that regular exercisers have much less overall lifetime morbidity than those who are sedentary, indicating that avoided medical costs due to physical activity are not simply deferred to older ages.

Urban planning offers excellent opportunities to increase chances for physical activity of residents by making walking or cycling viable alternatives to motorized transportation and by providing access to sports and recreation facilities. A recent study conducted in Atlanta, Georgia, found that availability and connectedness of neighbourhoods are strongly associated with a decrease in the risk of obesity, while increased time spent in a car is associated with increasing risk of obesity.

The total economic burden of physical inactivity in HRM is estimated at over \$68 million per year. This amounts to \$180 per person per year in HRM.

From a public health perspective, the best return on investment is to move the sedentary population to become moderately active.

Evidence indicates that the most effective interventions to increase physical activity at the population level are those that are comprehensive, integrated, multi-disciplinary and multi-level; targeting individuals, communities, physical and social environments and policies.² This requires key stakeholders such as education, health, municipal and provincial governments and others to work in partnership toward a common goal.

Partnership

The following organizations are partners to this memorandum of understanding:

Organization	Partner Representatives
Capital District Health Authority	Director, Community Health Manager, Health Promotion
Community Health & Epidemiology, Dalhousie University	Coordinator, Health Outcomes Research, Community Health & Epidemiology
Halifax Regional Municipality (HRM)	General Manager, Community Recreation Services Area Coordinator, Community Recreation Services Active Living Coordinator, Community Recreation Services
Halifax Regional School Board	Facilitator, Health Promotion
Heart and Stroke Foundation of Nova Scotia	Director of Health Promotion
IWK Health Centre	Executive Director, Primary Health Care
Nova Scotia Health Promotion and Protection	Manager, Physical Activity, Sport & Rec Medical Officer of Health Regional Representative Physical Activity Sport & Recreation

The partners will provide overall governance and direction with regard to the development of the physical activity strategy. It is expected that the members representing the partner organizations (the Committee) will commit to participating in meetings and subcommittee work as required to develop the strategy. The partners will collaborate to garner the resources necessary to develop the strategy.

The Committee will be chaired by Capital Health, with HRM as assistant chair of meetings. A coordinator, approximately (.4 FTE) to support the Committee, will be provided by HRM through a cost-shared arrangement between Nova Scotia Health Promotion and Protection and HRM

Guiding Principles

- The principles of health promotion, population health and community development will guide the actions of the Committee.
- The strategy will build on existing strengths and successes.
- The development of the strategy will respect diversity.
- Decisions will be evidence informed.
- Future partnerships may be formed with other organizations from the public, private and/or volunteer sectors.
- The strategy will be consistent with the mission and values of each of the partner organizations.
- A comprehensive, collaborative approach will be used in the development of the strategy.

Decision Making

Decisions will be made by consensus.

Time Frame

It is anticipated that the development of the strategy will be complete by late Fall 2007.

Accountability

The committee members are accountable for strategy development through their respective organizations.

Reporting

Regularly progress reports will be provided to senior management of the respective partner organizations.

Capital District Health Authority

Halifax Regional Municipality

Halifax Regional School Board

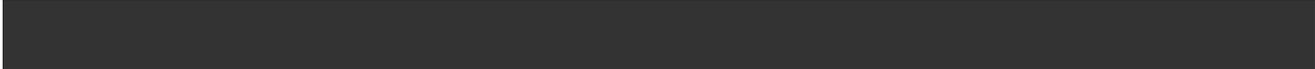
Heart and Stroke Foundation of Nova Scotia

IWK Health Centre

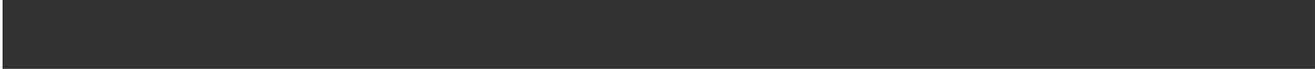
Nova Scotia Health Promotion and Protection

Community Health & Epidemiology, Dalhousie University

1. Walker, S., Coleman, R., (2004). The Cost of Physical Inactivity in Halifax Regional Municipality.
2. Raine, K., (2004). Overweight and Obesity in Canada: A Population Perspective. Canadian Institute for Health Information



Appendix D: Community Profile



Demographic Profile

The following is a snap shot of demographic information on HRM. The four main sources used for this profile are:

- HRM Regional Plan (2006)
- Nova Scotia Community Counts
- Canadian Community Health Survey
- 2006 Canadian Federal Government Census

An Overview

Halifax Regional Municipality (HRM) was created in April 1996 through the amalgamation of the Cities of Halifax and Dartmouth, the Town of Bedford and the Municipality of the County of Halifax. HRM's land mass encompasses approximately 5,577 square kilometres. That's larger in size than all of Prince Edward Island. With more than 200 communities, the municipality includes seaside villages, rural and farming communities, suburban neighbourhoods and communities and urban centres. Statistics Canada reports that as of 2006, HRM's population is just under 373,000, representing 40% of Nova Scotia's population and 15% of all Atlantic Canada's.

A Growing Community

HRM is the fastest growing region in Nova Scotia. The greatest percentage of this growth has been experienced just outside of the urban core, in the region's suburban and rural commutershed areas. Research projects that up to an additional 100,000 new residents will live and work in HRM by 2028. In comparison, Nova Scotia has a population of 913,462 which is 1% higher than in 1991. This rate of growth is much lower than for Canada with an overall growth rate of 9.9%. In Nova Scotia, over 23% of the population is under the age of 20 and 11.6% are 65 years or older. In Canada, 25.1% of the population is under the age of 20 and 13.4% was 65 years or older.

A Changing Community

In Nova Scotia, family structure has shifted from the traditional larger married families to smaller married families and an increase in lone-parent families. In 2006, for HRM, total census families increased 2% to 105,291. Married families increased by 19% while lone-parent families increased 4.0%. Lone female parent families were 14.2% of all families while lone male parents were 2.4% of all families.

A Diverse Community

Canada's Ethnocultural Mosaic, 2006 Census: Canada's major census metropolitan areas Halifax: Highest proportion of visible minorities in the Atlantic region

An estimated 7.5% of Halifax's population, 27,600 people, belonged to a visible minority group. While this proportion was below the national level of 16.2%, it was higher than any other census metropolitan areas in the Atlantic region, such as Saint John (3.1%), Moncton (2.0%) and St. John's (1.9%). The proportion of visible minorities in Halifax was up from 7.0% in 2001.

Blacks accounted for almost one-half (48.0%) of visible minorities in Halifax. They represented the largest group in the census metropolitan area's visible minority population and made up 3.6% of the total population in Halifax in 2006. Nine in 10 Blacks in Halifax were Canadian-born. This was the highest proportion of Canadian-born Blacks in any census metropolitan area in Canada. In fact, Halifax had the highest proportion of Canadian-born visible minorities in the country.

The second largest visible minority group was those who reported Arab. They made up 1.0% of the total population in Halifax. Among Arabs, 71.4% were born outside of Canada. Chinese and South Asian visible minority groups each comprised 0.8% of the population.

Halifax was home to about 180 different ethnic origins. In 2006, the most frequently reported ethnic origin was Canadian. Over one-third of the population (37.6%) reported Canadian origin, either alone or with other ancestries. English, Scottish, Irish and French were also among the top ethnic origins reported. The ethnic composition of the population reflects the long history of these ethnic groups in Halifax.

Other common ancestries in Halifax were German, Dutch and North American Indian. Most residents who reported these ancestries did so in combination with at least one other group. The list of the 10 most frequently reported ancestries was almost the same as in 2001.

Physical Activity Profile⁹

Physical activity for DHA 9 & NS (Age 20+) (District Health Authority) CCHS 3.1 (2005)

Physical Activity Index

	DHA 9	NS
active	21.8%	20.6%
moderately active	28.2%	25.4%
inactive	50.0%	54.0%

% Active/moderately active by sex and age

	DHA 9			NS	NS		
	Male	Female	Both sexes		Male	Female	Both sexes
age 20-44	54.4%	54.8%	54.6%	50.6%	51.3%	50.9%	
age 45-64	48.5%	52.1%	50.4%	45.7%	48.5%	47.1%	
age 65+	32.9%	29.8%	31.1%	35.6%	26.0%	30.1%	
all age 20+	49.8%	50.2%	50.0%	46.4%	45.5%	46.0%	

% Active/moderately active by income adequacy

	DHA 9	NS
lowest	58.8%	46.5%
lower middle	30.1%	32.5%
middle	36.7%	37.2%
upper middle	47.7%	45.4%
highest	58.5%	56.9%

% Active/moderately active by self reported health status

	DHA 9	NS
Excellent	72.0%	66.5%
very good	49.3%	48.4%
good	43.8%	38.9%
fair/poor	31.7%	28.7%

% Active/moderately active by selected chronic conditions

	DHA 9		NS	
	Reported	Not reported	Reported	Not reported
arthritis	34.6%	53.7%	36.1%	49.4%
back problems	43.2%	51.9%	40.4%	47.6%
diabetes	24.2%	51.6%	29.9%	47.3%
hypertension	29.4%	53.8%	32.0%	49.5%
heart disease	32.2%	51.5%	27.3%	47.6%
respiratory diseases	36.8%	46.8%	34.1%	44.8%

⁹ Source: Canadian Community Health Survey 2005. Custom tabulation prepared by NS Department of Health. District Health Authority 9 (Capital Health) is HRM and West Hants

Most reported activities

	DHA 9	NS	
walking	76.4%	73.4%	
gardening	49.0%	53.0%	
home exercises	37.4%	32.7%	
social dance	24.8%	23.7%	
swimming	24.1%	21.3%	
weight training	20.2%	14.5%	
running	17.3%	12.7%	
bicycling	14.4%	12.1%	
aerobics	14.3%	9.8%	
golfing	11.0%	9.4%	
bowling	8.4%	9.0%	
ice hockey (DHA9) fishing (NS)	6.9%	8.2%	

% Who reported non-leisure walking per week

	DHA 9	NS	
none	26.9%	27.0%	
less than 1 hour	10.0%	10.4%	
1-5 hours	31.9%	33.7%	
6-10 hours	12.4%	11.7%	
11-20 hours	8.5%	7.4%	
more than 20 hours	10.4%	9.9%	

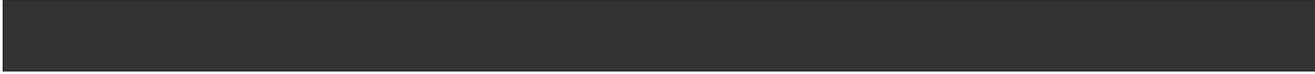
% Who reported non-leisure biking per week

	DHA 9	NS	
Yes	5.1%	3.9%	

Current Physical Activity Initiatives

The Physical Activity Strategy Committee (PASC) prepared an inventory of local and provincial physical activity initiatives, as well as an inventory of national organizations that influence physical activity within HRM (Appendix D). Although not exhaustive, the list demonstrates the wide range of groups and organizations currently contributing to a more active HRM. These initiatives have helped shape the development of the Physical Activity Strategy, as a central principle of the Physical Activity Strategy is to build upon existing infrastructure, programs and services. The strategy complements, but does not duplicate, the initiatives noted in Appendix D.

<p><u>Major Strategies and/or Initiatives:</u></p> <p>HRM Wide Active Halifax Communities (AHC) Be Active For Fun, Be Active For Life – School activity challenge Get Out Check It Out – Walk, Hike, Bike through the Halifax Regional Municipality Girls Soar Physical Activity Week (AHC & HRSB) HRM Active Transportation Plan HRM Regional Plan HRM Bike Week HRM Bike Plan Joint Use Agreement HRM & HRSB Our Healthy Schools (HRSB)</p> <p>Provincial Ecology Action Centre: Active Safe Routes to School TRAX Green mobility grants ADAPT</p> <p>Heart and Stroke Foundation of Nova Scotia: - Make a Move Walk About Health Directory</p> <p>Nova Scotia Health Promotion and Protection: Active Kids Healthy Kids Girls Physical Activity Week Nova Scotia Framework for PASR Municipal Cost Share Program (creating municipal PA Strategies)</p> <p>Nova Scotia Youth Fitness Leaders Tumble Bugs (Gymnastics NS) www.activekidsns.ns.ca www.momsanddads.ca</p> <p>Recreation Nova Scotia: Everybody Gets to Play High Five June is Recreation Month Take the Roof off Winter Moving to Inclusion Move More</p>	<p>Sport Nova Scotia: After School Physical Activity program Sport Makes a Difference Sport Futures</p> <p>Various: Doctors Nova Scotia Youth Running for Fun Health Promoting Schools Nova Scotia Alliance for Healthy Eating and Active Living Nova Scotia Chronic Disease Prevention Strategy Nova Scotia Child and Youth Strategy Nova Scotia Sport Plan Nova Scotia Comprehensive Workplace Health Strategy Our Healthy Schools Sport Animator Initiative</p> <p><u>Funding Assistance:</u> Amateur Sport Fund (Sport Nova Scotia) Canadian Tire Jump Start (Canadian Tire) Children's Fitness Tax Credit (Canadian Government and Nova Scotian Government) Community Development Funds (Community Health Boards) IWK Community Grants (IWK Health Centre) Good Ideas Funding Grants (Active Halifax Communities) Green Mobility Grants (Ecology Action Centre) HRM Kids (Halifax Regional Municipality) Kids Sport (Sport Nova Scotia) Our Healthy School Grant (Our Healthy Schools) Sport Futures (Sport Nova Scotia)</p>	<p><u>National Organizations & Associations:</u> Active Living Alliance for Canadians with a Disability Boys and Girls Clubs of Canada Canadian Association for the Advancement of Women and Sport and Physical Activity (CAAWS) Canadian Association of Health, Physical Education, Recreation and Dance (CAHPERD) Canadian Fitness and Lifestyle Research Institute (CFLRI) Canadian Parks and Recreation Association (CPRA) Coalition for Active Living (CAL) Go for Green Health Canada - Public Health Agency of Canada Lifestyle Information Network (LIN) ParticipAction YMCA – Strong Kids</p> <p><u>Policies and Reports of Influence:</u> Active 2010 (Ontario) Active Healthy Kids Canada Report Card Canadian Community Health Survey Nova Scotia Healthy Kids Active Kids Strategy Pan-Canadian Physical Activity Strategy "The Cost of Physical Inactivity" - GPI Atlantic (HRM, and Nova Scotia)</p>
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**Appendix E: Agencies & Organizations Invited to Send
Representatives to the Review Groups**



Health – Review Group

- Capital Health: Heart Health & Emergency, Community Health Board, Public Health Services, Primary Care, Diabetes Case Management, Hearts in Motion
- Community Justice Society
- Community Resources, United Way of Halifax Region
- Department of Community Services
- Early Childhood Development (ECD)/Community Outreach (CO),
- Health Association of African Canadians
- Healthwise Wellness Centre
- IWK Health Centre: Research, Children’s Heart Centre, Endocrinology, Recreation Therapy, Family Medicine
- Prevention, Cancer Care NS
- Primary Health Care, Department of Health

Business – Review Group

- Aliant - Health and Wellness, Human Resources Department
- Bank of Montreal
- Canadian Forces - Primary Care Services
- Capital Health - Workplace Health
- Dalhousie University - Human Resource Development
- Greater Halifax Partnership
- Halifax Chamber of Commerce - Health Action Committee
- Halifax Regional Municipality - Healthy Workplace
- Health Services Centre Atlantic
- IWK Health Centre - Healthy Workplace
- Jacques Whitford Consulting
- Manulife Financial - Employee Relations
- Nova Scotia Association of Health Organizations - Organizational Development
- Nova Scotia Health Promotion and Protection - Workplace Health
- Nova Scotia Power - Health and Wellness
- Policy, Halifax Chamber of Commerce
- Public Service Commission - Healthy Workplace Program
- Secunda Marine - Human Resources
- Workman’s Compensation Board - Prevention Services

Community – Review Group

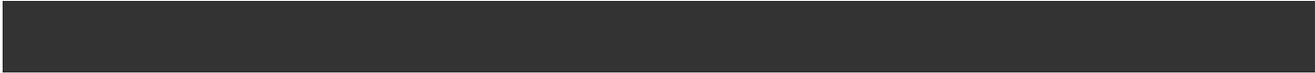
- Active Halifax Communities
- Athletics, Dartmouth Sportsplex
- Arthritis Society of Nova Scotia
- Canadian Mental Health Association, Nova Scotia Division
- Community Recreations Services, Halifax Regional Municipality
- Councillors, Halifax Regional Municipality
- East Dartmouth Boys and Girls Club
- Nova Scotia Youth Secretariat
- Prospect Recreation Association
- Provincial Diabetes Care Program
- LWF Rate Payers Association
- Recreation Nova Scotia
- Seniors' Secretariat
- Sport Development, Sport Nova Scotia
- Woodside Community Centre
- YMCA of Greater Halifax/Dartmouth
- Youth Fun Run Program, Doctors Nova Scotia

Municipal and Physical Environment – Review Group

- Atlantic Health Promotion Research Centre, Dalhousie University
- Halifax Regional Municipality:
 - Councillors:
 - Community Development: Regional Planning & HRM by Design, Development, Community Relations & Cultural Affairs, Community Recreation Services, Regional Transportation
 - Infrastructure & Asset Management: Real Property, Trails
 - Public Works & Transportation: Active Transportation
 - Traffic Authority:
- Heart and Stroke Foundation of Nova Scotia

Education – Review Group

- Active Healthy Living, Nova Scotia Department of Education
- Halifax Regional School Board: Health Promotion Team, Physical Education Teachers, Principals, Athletics, School Administrator, and Communications Services,
- Public Health Services, Youth Health Centres



Appendix F: Summary of Review Group Input



Summary - Review Group Input

The following notes summarize major themes from the first meetings with the five Review Groups. These sessions addressed the following questions:

1. What are the most significant barriers to a more physically active population in HRM?
2. If our objective is to significantly increase physical activity levels in the short term (the next 3-5 years) what are the 3 most important initiatives that should be undertaken in HRM?
3. If the PA Strategy is successful, it will be because a wide range of HRM agencies and organizations actively participate in the Strategy's implementation. Thinking of your own agency or organization, what constraints, if any affect your ability to participate in the PA Strategy? What opportunities are available to your organization to play an active role in the PA Strategy? What challenges are associated with implementing a PA Strategy that involves a joint effort among a variety of agencies? How can these challenges be addressed?
4. Our objective is to create a PA Strategy that engages all HRM residents and achieves higher levels of participation among the population at large. However, we may need to place a priority on certain segments of the population, particularly in the short term. If the PA Strategy was targeted to particular segments of the population, who do you feel should be the priority group(s)? And why would you suggest that these groups be the priority?

Review Group participants offered a wide range of perspectives on these questions. Responses are reported as received from participants; however, not all of the comments are captured in the summary that follows.

Question 1: Barriers to Physical Activity

- A lack of infrastructure and available facilities (bike paths and sidewalks in urban areas, recreation centres, gyms, trails, playgrounds, etc.) and/or barriers to access associated with existing infrastructure (e.g. school or church gyms).
- Accessibility is a barrier around the use of the existing infrastructure. HRM is a very large area consisting of both urban and rural communities, and while certain areas have easy access to recreation/fitness centres, hiking trails, etc., there are many communities with limited access.
- The public transportation system is not particularly good, and bike paths, trails and sidewalks are unavailable. School children dependent on bussing (or parents) for transportation face additional barriers.
- Shifting demographic structure of neighbourhoods – too few children for spontaneous play (even if parents were comfortable with their children being outside, unsupervised.)
- Natural assets (lake, coastline, forests) are not promoted and used to the extent possible, despite their significance in HRM. These are ideal venues for physical activity, but are not well used – perhaps in part due to poor promotion or inadequate design and development.
- Increasing reliance on an insufficient supply of volunteers for community and for after school programs.

- The weather in HRM limits outdoor activities, particularly among those who don't have the time or desire to go to an indoor facility and would rather go for a run or bike ride. Poor ice and snow removal affects pedestrians in winter.
- There is a culture and lifestyle of inactivity; and increasingly this is seen as the norm. Physical activity is not seen as a valuable part of people's lifestyles. Those who don't have the ability, time, or financial resources to participate in sport, are not being encouraged to adopt an active lifestyle in other aspects of their home, work and leisure time.
- Physical activity is not a part of our culture. Work dominates; leisure is increasingly focused on entertainment; social rather than physical activity; and screen time. The physically active are defined as physically fit and this is seen as a preferred lifestyle of only a segment of society.
- A sedentary family lifestyle, focused on screen time, is a barrier. Parents are poor role models. Two working parents don't have the time to participate and promote physical activity with their children.
- Poverty in HRM is a significant constraint. It is often those in poverty that are the physically inactive and unhealthy.
- Employer attitudes towards physical activity in work life are not positive (limited flexibility; attitudes and policies that are not supportive, few at work facilities to support active lifestyles, etc.)
- Awareness of existing resources and promotion and marketing are barriers.
- There is a lack of physically active media and promotion. The media surrounding physical activity may be sending a negative message (focused on health risks and problems of inactivity). A more positive message, focusing on healthy living and the benefits of physical activity, would have greater impact.
- The benefits of physical activity are not being addressed appropriately. While the health benefits of physical activity are discussed, broader social and economical benefits are not well known and not often promoted. This is a very important consideration in the corporate sector. Promotional efforts must speak the language business people understand.
- Policies restrict access to facilities (fees; scheduling and priorities; school use; liability, etc.)
- Service providers are diminishing. There are not enough agency providers (in rural areas) and volunteers are not available.
- Liability issues.
- School Board regulations restrict community access and place significant limitations on teachers wishing to run extra curricular activities and programs.
- Insufficient attention devoted to physical activity in the schools. Need more time in curriculum; better facilities; trained staff; resources for staff, etc. The schools are the single most effective venue for promoting physical activity because there is a captive audience at the age where they can be influenced; established, immediately accessible facilities (although not always good ones); and trained staff. Resources simply must be committed to physical activity in the educational setting.
- Sports in society generally are increasingly focused on teams and competitive activity. Spontaneous physical activity is not seen as a normal, valued behaviour, or promoted as such.
- Safety is both a real and a perceived barrier, particularly in urban areas and with respect to walking and cycling.
- Personal safety is also a barrier, although this may be more perceived than actual. Parents are afraid to allow their children to play outside without adult supervision. Children are often not

allowed to walk to a playground. Adults, particularly women, do not feel safe walking alone at night, or using isolated trail systems.

Question 2: Key Initiatives to Increase Physical Activity

- Promotion and additional easy to access information concerning physical activity opportunities. Information regarding locations of facilities, trails, programs etc. must be improved and specifically directed to the non-active population.
- Marketing and promotion of the value of physical activity (beyond competitive sport) to establish physical activity as a valued and central aspect of one's lifestyle. A social marketing strategy promoting a positive view of physical activity in all aspects of life (e.g. active transportation for work and errands, walking and hiking with family and friends in a safe and comfortable environment, walking to school, incorporating recreation in everyday life).
- Create strategies, and marketing and promotional programs, that cater to more than one social value or need. For example, position physical activity as a health and an environmental benefit. The environment is top of mind with the public; connections between physical activity and initiatives around the environment will be successful.
- Normalizing physical activity. Through the media, establish physical activity as a social value rather than a discretionary activity. The media generally portrays the physically fit as a special breed and consequently sends a message that physical activity isn't for everyone. Use the media to reposition physical activity as a popular pastime, easily achievable by everyone. Use the media to connect physical activity to all aspects of life.
- Improving access to existing community infrastructure for physical activity – especially schools but also churches, recreation centres, potentially corporate facilities, etc. Requires affordable fee structures (preferably no fees) and policies that remove administrative and scheduling barriers; address liability issues, etc.
- Increasing access to free infrastructure. There are many facilities that sit unused much of the time, such as school gyms after hours. Free access would greatly expand use and physical activity levels
- Promote active transportation. Link communities with walking and biking paths. Establish a network of safe bike paths linked to priority destinations so people have the option of cycling to work. Support this active transportation network in HRM through the development and distribution of information (e.g. maps; tips of safe cycling, information on the health and environmental benefits of walking or biking versus driving).
- Using existing outdoor corridors in HRM as a framework for a recreational and active transportation network.
- Improvements to community planning and development policies to support active lifestyles.
- Strategies to support and encourage unstructured play, particularly outside. Creating a safe environment for children's play.
- Increase programming alternatives to organized sport and more attention to non-competitive recreational programs and non-sport programming (e.g. yoga) in community recreation programs and particularly at school. These are required to attract an increasing number of students who are unable, unwilling are uninterested in participating in traditional school sports.
- Increasing physical activity as a mandatory component of the school curriculum supported by improved facilities and more trained teachers.

- Greater flexibility and sensitivity to the specific needs of different segments of the school age population (e.g. junior high school females prefer gender segregated programs and female instructors). Creating a comfortable, supportive and welcoming atmosphere is very important in developing healthy outlooks toward physical activity, particularly among young girls or new Canadian students.
- Expanding physical activity in the workplace both through corporate programs and incentives, including tax incentives, but also with changes to the workplace (showers) and overcoming resistance rooted in traditional business practices (encouraging walking breaks, providing nutritional food options, flexible time, etc.) available.
- Conduct long-term research, ideally in HRM, specifically focused on the business audience to clearly demonstrate there is a “business case” for physical activity. Get this message to corporate decision-makers.
- Creative partnerships with other service providers so that physical activity is effectively integrated in programs focused on recreation, health, education, etc.
- Repositioning recreation in all municipal service delivery to command a higher priority. Recreation and physical activity needs to be much more prevalent in the education system but also become a higher priority in municipal strategies focused on economic development, tourism, and the environment. Recreation must be viewed as an essential service.
- Eliminate bureaucratic and administrative barriers to physical activity resources. (e.g. policies around liability and insurance; under-used schools; etc.).

Question 3: Opportunities and Constraints Affecting Participation in Implementation

Constraints:

- Health and physical activity is not always central to the core business or mandate of organizations that could be involved in physical activity promotion or programs. Freeing resources to commit to objectives that are not central to the organization’s mandate or business plan will be difficult.
- A number of municipal initiatives that would support physical activity require provincial approval or must conform to provincial policies. Complementary provincial policies and resources are required.
- Organizations receiving core funding from the Province must submit business plans consistent with the service and program objectives of the funder. If physical activity is not a priority of the funder, it will be difficult to represent it in an organization’s business plan.
- Within the health community, a focus on disease prevention and treatment rather than physical activity as a healthy lifestyle may discourage active involvement in physical activity strategies.
- Lack of resources for sustainable, long term initiatives.
- Large companies, which are most likely to have the resources to engage in physical activity, operate provincially or nationally and may not be engaged by a HRM strategy.
- Corporate mandates and priorities do not recognize employee physical activity.
- Human resource departments often don’t understand the need for physical activity and are not proponents of corporate physical activity programs.
- The size and urban/rural nature of HRM. There are a number of organizations that are interested in positively affecting physical activity and recreation in HRM but do not have the means to serve the entire community.

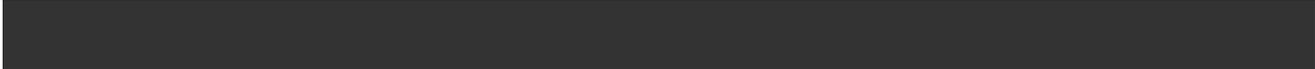
- Physical activity does not have a strong enough voice within school boards. Physical activity is organized at the individual school level and a senior level advocate will generally not be in place within the board. Leadership in this respect is lacking and a “board-wide” response to a HRM strategy may not be forth-coming.

Opportunities:

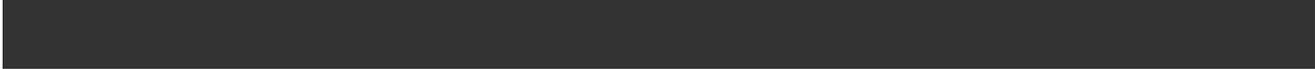
- Having a Physical Activity Strategy is an important first step in encouraging more programs and committing more resources to physical activity. The Strategy will be a focus for these efforts; particularly among organizations that are already committed, such as Community Health Boards, but they may not have plans and priorities.
- There is a strong and growing social awareness around healthy living and physical activity. This strategy could be the initiative that really brings this topic to the forefront.
- The development of partnerships among physical activity stakeholders. Physical activity cuts across the interests and mandates of a number of organizations in such diverse fields as health, recreation, transportation, education, etc. There is a significant opportunity to raise the profile and priority of physical activity initiatives by having this wide range of stakeholders “join forces”.
- Increased and shared resources, more effective advocacy in a number of settings, reduced duplication and greater coordination of policy and planning could be the result.
- Corporations in HRM could be approached as sponsors of the PA strategy (similar to the Canada Trust environmental fund or Tim Horton’s summer camps)
- Corporations are very image conscious; physical activity may be a useful public relations and marketing tool.
- Creating relationships among schools and organizations such as recreation departments is necessary and may be facilitated by a community wide strategy. Stronger relationships are needed and a network must be created to foster joint school-community initiatives.
- Successful past models can be used as an incentive for a strategy based on physical activity (e.g. anti-smoking strategies).
- To be successful, physical activity strategies must be closely linked to other health issues. (e.g. obesity and diabetes) Stronger links to physical activity and healthy living would make a very positive impact on these issues.
- Move physical activity and healthy living outside of the health field. Use this initiative to integrate physical activity into other areas and promote the social, financial, and educational benefits, not simply the health benefits.
- Use groups, programs, organizations, businesses and resources that already exist in HRM such as the “Active Kids, Healthy Kids” program. Tie into other resources (e.g. Dalhousie University research capability).

Question 4: Target Group

There was no consensus concerning target groups. However, low income populations and primary school children were mentioned, respectively, by four and three of the five Review Groups. Other target populations that were mentioned by the Review Groups were: families; rural residents; employees; females; seniors; youth; marginalized populations; corporate/political leaders; and African Nova Scotians.



Appendix G: Summary of Citizen Survey



Introduction

A survey of HRM residents on physical activity levels and attitudes was conducted by Corporate Research Associates. The sample for this study was drawn using systematic sampling procedures from a list of randomly-selected households compiled from listed telephone numbers in the Halifax Regional Municipality, drawn from a database that is updated quarterly. The sample was selected to match the geographical distribution of the population within the region and was designed to complete interviews with a representative sample of 400 adult residents, 18 years of age and older, of the Halifax Regional Municipality.

The survey was conducted by telephone from November 2 to November 14, 2007 from Corporate Research Associates' data collection facilities in Halifax. Among all eligible respondents contacted, the rate of interview completion was 15 percent. Completion rate is calculated as the number of cooperative contacts (627) divided by the total of eligible numbers attempted (4,313).

Analyses and Results

The following analysis was prepared by Dr. Chris Blanchard, Department of Medicine (Division of Cardiology), Dalhousie, University.

Part One

In order to determine whether the percentage of participants who were inactive (i.e., not meeting the Physical Activity recommendation for adults) versus active (i.e., accumulated 30 minutes of moderately intense Physical Activity at least 5 days per week or 20 minutes of vigorous Physical Activity at least 3 days per week) varied by gender, age group, education, income, employment status, and community, a series of χ^2 analyses were performed. As can be seen from Table 1, males were more likely to be active than females. Table 2 shows that the 45 to 54 and 65 or older age groups were the least active, whereas the 18 to 24 group were the most active. However, Tables 3 to 6 showed that employment status, education, income, and community did not vary by activity status. Finally, Table 7 showed that inactive participants were more likely to walk or bike to work and engage in Physical Activity outside compared to active individuals. Therefore, the demographic results suggest that gender, age (i.e., > 45 years of age), and "place" (i.e., walking or biking to work and engaging in Physical Activity outside) may need consideration in the Physical Activity strategy.

Table 1
Physical Activity Percentages By Gender

	<i>Inactive</i>	<i>Active</i>	<i>Total</i>
Male (n = 192)	56.0%	44.0%	100%
Female (n = 216)	65.9%	34.1%	100%

Note. $\chi^2(1) = 4.14, p < .05.$

Table 2
Physical Activity Percentages by Age

	<i>Inactive</i>	<i>Active</i>	<i>Total</i>
18 – 24 (n = 27)	18.5%	81.5%	100%
25 – 34 (n = 68)	60.3%	39.7%	100%
35 – 44 (n = 92)	58.7%	41.3%	100%
45 – 54 (n = 92)	72.5%	27.5%	100%
55 – 64 (n = 63)	59.7%	40.3%	100%
65 or older (n = 66)	69.2%	30.8%	100%

Note. $\chi^2(5) = 27.73, p < .01.$

Table 3
Physical Activity Percentages by Employment Status

	<i>Inactive</i>	<i>Active</i>	<i>Total</i>
Employed (n = 268)	60.8%	39.2%	100%
Not employed (n = 130)	61.9%	38.1%	100%

Note. $\chi^2(1) = .05, p > .05$

Table 4
Physical Activity Percentages by Education

	<i>Inactive</i>	<i>Active</i>	<i>Total</i>
< University (n = 230)	63.9%	36.1%	100%
≥ University (n = 172)	57.0%	43.0%	100%

Note. $\chi^2(1) = 1.98, p > .05$

Table 5
Physical Activity Percentages by Income

	<i>Inactive</i>	<i>Active</i>	<i>Total</i>
< \$25,000 (n = 33)	63.6%	36.4%	100%
\$25,000 to \$49,999 (n = 72)	65.3%	34.7%	100%
\$50,000 to \$74,999 (n = 95)	57.9%	42.1%	100%
\$75,000 to \$99,999 (n = 77)	64.9%	35.1%	100%
≥ \$100,000 (n = 79)	58.2%	41.8%	100%

Note. $\chi^2(4) = 1.76, p > .05$

Table 6
Physical Activity Percentages by Community

	<i>Inactive</i>	<i>Active</i>	<i>Total</i>
Halifax (n = 167)	56.9%	43.1%	100%
Dartmouth (n = 77)	62.3%	37.7%	100%
Bedford / Sackville (n = 72)	61.1%	38.9%	100%
Other HRM (n = 89)	68.5%	31.5%	100%

Note. $\chi^2(3) = 3.37, p > .05$

Table 7
Where Did You Engage in PA In the Past Week?

	<i>Inactive</i>	<i>Active</i>	<i>Total</i>
Recreation facility /park (n = 105)	45.7%	54.3%	100%
Work (n = 28)	50.0%	50.0%	100%
Home (n = 72)	47.2%	52.8%	100%
Walking or biking to work (n = 21)	76.2%	23.8%	100%
Outside (n = 105)	62.9%	37.1%	100%

Note. $\chi^2(4) = 11.88, p < .05$

Part Two

To determine if social influences, potential opportunities that would increase Physical Activity, intentions to engage in Physical Activity, and potential opportunities to increase Physical Activity among children varied by activity status (i.e., sedentary, inactive, or active), a series of one-way ANCOVAs (i.e., controlling for age and gender) were performed. In terms of social influences, Table 8 shows that health care professionals have a significantly greater influence for inactive versus active participants, however, the remaining social influences had similar scores for the inactive and active groups. Importantly, one would hypothesize that health-care professionals should be “positively” related to Physical Activity, not negatively related as was shown in Table 8 (i.e., the results in Table 8 actually suggest that the more Physical Activity one engaged in over the past week, the less influence a health care provider had on his / her PA). Therefore, these data suggest that none of the social influences are related to Physical Activity in the current sample, or in the expected direction. As such, these may not be “optimal” targets in the Physical Activity strategy.

Regarding opportunities that would potentially increase Physical Activity, Table 9 shows that none of the four potential opportunities differed significantly between the inactive and active groups. Therefore, none of these would be expected to change Physical Activity (i.e., these opportunities may not be “optimal” targets in your Physical Activity strategy).

In terms of Physical Activity intentions, Table 10 shows that active participants were significantly more likely to intend to engage in regular Physical Activity, engage in Physical Activity at home, engage in Physical Activity at work, and walk / bike to work compared to inactive individuals. Therefore, all four intentions should be considered as potential “targets” in your Physical Activity strategy.

Finally, Table 11 shows that the responses to various opportunities that would increase children's Physical Activity levels did not vary by inactive versus active groups.

Table 8
Who Influences You to Engage in Physical Activity?

	<i>Inactive (I)</i>	<i>Active(A)</i>	<i>ANCOVA Results</i>
Siblings (n = 278)	3.16	2.72	I = A
Children (n = 267)	5.18	4.78	I = A
Friends (n = 356)	4.82	4.85	I = A
Coworkers (n = 231)	3.81	3.78	I = A
Health care professional (n = 341)	4.79	3.80	I > A
Spouse/partner (n = 303)	5.70	5.91	I = A

Note. Scale range = 1(no influence) to 10(a lot of influence).

Table 9
What Opportunities Would Increase Your Physical Activity?

	<i>Inactive (I)</i>	<i>Active(A)</i>	<i>ANCOVA Results</i>
Fee reductions at local facilities (n = 357)	2.36	2.32	I = A
Increased access to walking / biking paths (n = 367)	2.13	1.93	I = A
More information about PA benefits (n = 355)	2.81	2.64	I = A
On-site gym provided by employer or gym subsidized (n = 227)	2.04	1.95	I = A

Note. Scale range = 1(definitely) to 4 (definitely not).

Table 10
 What Are Your Intentions To Engage in Regular Physical Activity?

	<i>Inactive (I)</i>	<i>Active(A)</i>	<i>ANCOVA Results</i>
Intend to Engage in Regular PA (n = 262)	2.04	1.26	I > A
Intend to Engage in PA at Home (n = 402)	2.24	1.68	I > A
Intend to Engage in PA at work (n = 266)	2.95	2.29	I > A
Intend to walk or bike to work (n = 262)	3.42	3.01	I > A

Note. Scale range = 1(definitely) to 4 (definitely not).

Table 11
 What Would Promote Regular Physical Activity In Children?

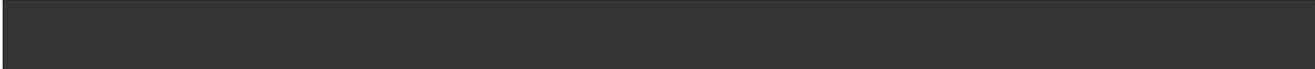
	<i>Inactive (I)</i>	<i>Active(A)</i>	<i>ANCOVA Results</i>
Greater access to recreation programs at reduced cost (n = 393)	1.60	1.53	I = A
Provided user-friendly information on PA benefits (n = 394)	2.06	2.07	I = A
Greater number of safe places to play outdoors (n = 397)	1.54	1.55	I = A
Greater access to physical education classes (n = 396)	1.43	1.37	I = A
Greater access to more after-school programs (n = 397)	1.62	1.63	I = A
Parents were able to engage in more PA with their children (n = 395)	1.52	1.37	I = A

Note. Scale range = 1(agree) to 5 (disagree).

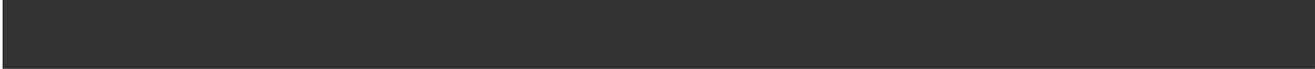
Summary and Recommendations

1. Gender and age (i.e., at least 45 years or older) are key demographic targets that need consideration in the Physical Activity strategy.
2. Social influences and potential environmental opportunities to increase Physical Activity were not statistically related to Physical Activity levels in the current sample.
 - a. Based on this “cross-sectional” sample, this would suggest that these particular targets not be included in the Physical Activity strategy.
3. Intentions to engage in Physical Activity, engage in Physical Activity at work, engage in Physical Activity at home, and walk or bike to work are potential targets that need consideration in the Physical Activity strategy.

PLEASE NOTE: This was a cross-sectional survey that was not specifically designed to examine whether social influences, the built environment, or intentions “explain” future Physical Activity behaviour, which is the standard approach used when designing Physical Activity interventions. Nonetheless, it does provide some insights worth considering, particularly the demographic differences demonstrated (which are definitely valid).



Appendix H: Glossary of Terms



Glossary of Terms

Access (or accessible) – Access is the ability or right to approach, enter, exit, communicate with, or make use of environments, facilities, programs, materials, and services. Access can be about offering solutions to geographic, financial, social, or other barriers. (Source: A Cultural Competence Guide for Primary Health Care Professionals in Nova Scotia, Nova Scotia Department of Health 2005)

Active transportation – Active transportation is any form of human-powered transportation. It is any trip made for the purposes of getting yourself, or others, to a particular destination
http://www.phac-aspc.gc.ca/pau-uap/fitness/active_trans.htm

Active living – A way of life in which physical activity is valued and integrated into daily living. (Source: Government of Canada 1992)

Advocacy for health – A combination of individual and social actions designed to gain political commitment, policy support, social acceptance and systems support for a particular health goal or program. (Reference: Report of the Inter-Agency Meeting on Advocacy Strategies for Health and Development: Development Communication in Action. WHO, Geneva, 1995)

Such action may be taken by and/or on behalf of individuals and groups to create *living conditions* which are conducive to *health* and the achievement of healthy *lifestyles*. Advocacy is one of the three major strategies for *health promotion* and can take many forms including the use of the mass media and multi-media, direct political lobbying, and *community* mobilization through, for example, coalitions of interest around defined issues. Health professionals have a major responsibility to act as advocates for *health* at all levels in society.

Health Benefits of Regular Physical Activity

- better health
 - improved fitness
 - improved posture and balance
 - better self-esteem
 - weight control
 - stronger muscles and bones
 - feeling more energetic
 - relaxation and reduced stress
 - continued independent living in later life
- Source: Canada's Guide to Physical Activity, 1998 www.paguide.com

Best Practice – Population/community-based interventions spanning a variety of approaches (i.e. policy, programs, media, etc) aimed at health promotion, disease prevention and management related to chronic disease that have been informed by and result in evidence of effectiveness to inform decision-makers in practice, policy and research within a variety of settings (i.e. health, education, workplace, urban, rural, etc.) and populations (i.e. male and female across the lifespan, Aboriginal, families, etc).

(Source: Best Practices Portal for Health Promotion and Chronic Disease Prevention, Methodology Working Group, Public Health Agency of Canada (2006).)

Built environment – The arrangement of activities or land uses within community settings, and the nature of the physical connections between the places where we live, work and play. The built environment can impact the risks for heart disease and stroke and affects how we travel, how physically active we are, levels of air pollution and rates of overweight and obesity among Canadians. (Reference: McCann, Barbara et al. Measuring the Health Effects of Sprawl. Smart Growth America, September 2003.)

Capacity building – Capacity building is the development of knowledge, skills, commitment, structures, systems and leadership to enable effective health promotion. It involves actions to improve health at three levels: the advancement of knowledge and skills among practitioners; the expansion of support and infrastructure for health promotion in organizations, and; the development of cohesiveness and partnerships for health in communities.

The competency of individual health promoters is a necessary but not sufficient condition for achieving effective health promotion. The support from the organizations they work within and work with is equally crucial to the effective implementation of health promotion strategies. At the organizational level this may include training of staff, providing resources, designing policies and procedures to institutionalize health promotion and developing structures for health promotion planning and evaluation. The scope of organizational capacity building encompasses the range of policies and partnerships for health promotion that may be necessary to implement specific programs or to identify and respond to new health needs as they arise. At the community level, capacity building may include raising awareness about health risks, strategies to foster community identity and cohesion, education to increase health literacy, facilitating access to external resources, and developing structures for community decision-making. Community capacity building concerns the ability of community members to take action to address their needs as well as the social and political support that is required for successful implementation of programs.

Disease prevention – Disease prevention covers measures not only to prevent the occurrence of disease, such as *risk factor* reduction, but also to arrest its progress and reduce its consequences once established. (Reference: adapted from Glossary of Terms used in Health for All series. WHO, Geneva, 1984)

Disparity – Difference(s) in health status that occur among population groups defined by specific characteristics. For policy purposes, the most useful characteristics are those consistently associated with the largest variations in health status. The most prominent factors in Canada are

socio-economic status, gender, geographic location, and aboriginal identity. (Source: Adapted from PHAC)

Diversity – Differences among people, as individuals or groups. Diversity includes difference in age, abilities, culture, ethnicity, gender, physical characteristics, religion, sexual orientation, values, etc. (Source: A Cultural Competence Guide for Primary Health Care Professionals in Nova Scotia, Nova Scotia Department of Health 2005)

Evaluation – The *Dictionary of Epidemiology* defines evaluation as "a process that attempts to determine as systematically and objectively as possible the relevance, effectiveness, and impact of activities in light of their objectives." The following types of evaluation are commonly used in health promotion and public health program evaluation:

- ❖ *Process evaluation* is an assessment of the process of program delivery. The components of a process evaluation of an intervention may include assessment of the following: *recruitment* of participants and *maintenance* of participation (also known as program reach); the *context* in which program is conducted and evaluated; *resources* required and used; *implementation* of the program relative to program plan; *barriers* and problems encountered; the magnitude of *exposure* to materials and activities; *initial use* or engagement in program activities at start of program; *continued use* of activities over time; and attainment of *quality standards*.
- ❖ *Impact evaluation* examines the initial effect of a program on proximal targets of change, such as policies, behaviours, or attitudes. Thus impact evaluation corresponds to assessment of the initial objectives of the program.
- ❖ *Outcome evaluation* refers to the consequent effect of a program on the health outcomes in populations, corresponding to the program goal or target. Outcome evaluation has also been called *summative evaluation*, because upon its completion a researcher or policy maker would be in a position to make an overall statement about the worth of a program. Such a statement assumes prior successful completion of process and impact evaluation.

Evidence-based health promotion – The use of information derived from formal research and systematic investigation to identify causes and contributing factors to health needs and the most effective health promotion actions to address these in given contexts and populations.

- ❖ Among the applications of evidence to health promotion planning is the identification of health promotion outcomes and intermediate impacts that should be addressed in order to achieve the goals of health promotion actions (Nutbeam D. (1986) Health promotion glossary. *Health Promotion* 1:113–127).
- ❖ It is important to note that formal evidence alone is not a sufficient basis for effective health promotion. External information can inform, but not replace the expertise of individual practitioners which guides the selection and application of evidence.
- ❖ Evidence on recommended physical activity interventions is summarized in The Community Guide to Preventive Services at <http://www.thecommunityguide.org/pa/default.htm>

Exercise – A form of leisure-time physical activity that is planned, structured, repeated, and enjoyable. Its main objective is to improve or maintain physical fitness.

Health outcomes – A change in the *health status* of an individual, group or population which is attributable to a planned intervention or series of interventions, regardless of whether such an intervention was intended to change *health status*.

Health Risks of Inactivity

- premature death
- heart disease
- obesity
- high blood pressure
- adult-onset diabetes
- osteoporosis
- stroke
- depression
- colon cancer

Source: Canada's Guide to Physical Activity, 1998 www.paguide.com

Health promotion – Health promotion is the process of enabling people to increase control over, and to improve their health. (Reference: Ottawa Charter for Health Promotion. WHO, Geneva, 1986)

Health promotion represents a comprehensive social and political process, it not only embraces actions directed at strengthening the skills and capabilities of individuals, but also action directed towards changing social, environmental and economic conditions so as to alleviate their impact on public and individual health. Health promotion is the process of enabling people to increase control over the determinants of health and thereby improve their health. Participation is essential to sustain health promotion action.

The **Ottawa Charter** identifies three basic strategies for health promotion. These are advocacy for health to create the essential conditions for health indicated above; enabling all people to achieve their full health potential; and mediating between the different interests in society in the pursuit of health.

These strategies are supported by five priority action areas as outlined in the Ottawa Charter for health promotion:

1. Build *healthy public policy*
2. Create *supportive environments for health*
3. Strengthen *community action for health*
4. Develop *personal skills*, and
5. Re-orient health services

Health Promoting Schools – “A health promoting school can be characterized as a school constantly strengthening its capacity as a healthy setting for living, learning and working.” (Reference: Promoting health through schools. Report of a WHO Expert Committee on

Comprehensive School Health Education and Promotion. WHO Technical Report Series N°870. WHO, Geneva, 1997)

6. Towards this goal, a health promoting school engages *health* and education officials, teachers, students, parents and community leaders in efforts to promote health. It fosters *health* and learning with all the measures at its disposal, and strives to provide *supportive environments for health* and a range of key school *health education* and promotion programs and services. A health promoting school implements policies, practices and other measures that respect an individual's self esteem, provide multiple opportunities for success, and acknowledge good efforts and intentions as well as personal achievements. It strives to improve the health of school personnel, families and community members as well as students, and works with community leaders to help them understand how the *community* contributes to *health* and education.

Intersectoral collaboration – A recognized relationship between part or parts of different sectors of society which has been formed to take action on an issue to achieve *health outcomes* or *intermediate health outcomes* in a way which is more effective, efficient or sustainable than might be achieved by the *health sector* acting alone. (Reference: modified from Intersectoral Action for Health: A Cornerstone for Health for All in the 21st Century. WHO, Geneva, 1997)

A major goal in intersectoral action is to achieve greater awareness of the health consequences of policy decisions and organizational practice in different sectors, and through this, movement in the direction of *healthy public policy* and practice. Not all intersectoral action for health need involve the *health sector*. Increasingly, intersectoral collaboration is understood as cooperation between different sectors of society such as the public sector (e.g. education, transportation, finance), civil society and the private sector.

Knowledge transfer – The exchange, synthesis, and application of information between those who develop new relevant knowledge (e.g., researchers) and those who use it for practice, planning, and policy-making (e.g., practitioners). Knowledge transfer strategies vary according to the type of research and the intended user audience (e.g., public presentations, education, user-friendly materials). Note: It can also be referred to as knowledge translation. (Source: Adapted from Canadian Institutes of Health Research)

Levels of physical activity for population 12+

Respondents to the 2005 Canadian Community Health Survey (CCHS) were classified as active, moderately active or inactive, based on their self-reported leisure-time pursuits. They were asked about the frequency, duration and intensity of their participation in a variety of activities over the previous three months. For each activity reported, average daily energy expenditure was calculated by multiplying the number of times the activity was performed, by the average duration, by the energy cost (kilocalories per kilogram of body weight per hour). The sum of the average daily energy expenditure of all activities was used to classify respondents as:

- *Active* - Using 3 or more kilocalories per kilogram of body weight per day; for example, walking an hour a day or jogging 20 minutes a day.
- *Moderately active* - Using 1.5 to less than 3 kilocalories per kilogram of body weight per day; for example, walking 30 to 60 minutes a day, or taking an hour-long exercise class three times a week.
- *Inactive* - Using less than 1.5 kilocalories per kilogram of body weight per day; for example, walking less than half an hour each day.

Health Reports, Vol18, No3, Aug 2007 Statistics Canada
<http://www.statcan.ca/english/freepub/82-003-XIE/2006008/articles/physically/findingphysically-en.htm>

Modifiable risk factor – A condition (i.e. risk factor) that could lead to development of a disease, but can instead be improved, prevented, or halted to prevent development of the disease (i.e. modified). For example, physical inactivity can lead to disease, disability, and death, but can be improved by increasing physical activity levels – thereby decreasing the likelihood of disease, disability, and death. This is in contrast to aging, which is a risk factor for disease, disability and death that cannot be prevented or halted.

Physical activity Physical activity (or active living) means more than just physical fitness or exercise. It means making physical activity a part of daily living, whether it's gardening or taking the dog for a walk or taking the kids out to fly a kite. Active living encourages everyone, not just people who are young and fit, to get up and get moving. Physical activities can focus on endurance, flexibility or strength. http://www.phac-aspc.gc.ca/hl-vs-strat/hl-vs/glossary_e.html

Point-of-decision prompts – Visual cues to guide individuals in adopting healthy behaviours. Point-of-decision prompts for increasing physical activity include signs or banners posted near elevators, escalators, or moving walkways with the intention of encouraging individuals to use stairwells or climb/walk rather than standing still. Such prompts have been evaluated in worksites and community settings, such as malls, airports, and office buildings.

Population health – Population health aims to improve health inequalities among population groups by examining and acting upon a broad range of factors and conditions that determine health. The main interventions used by population health are *societal-level policies* affecting the health of entire populations (e.g., increasing tobacco taxes). The impact of these policies is monitored through the use of large-scale data sets. Unlike health promotion, population health does not place as much emphasis on strategies promoting individual and community level change, such as education, organizational change and community mobilization.

Quality Daily Physical Education - The Canadian Association of Physical Education, Health, Recreation and Dance defines QDPE is a well-planned school program of compulsory physical education provided for a minimum of 30 minutes each day to all students (Kindergarten to grade 12) throughout the school year. A QDPE program includes:

- Daily curricular instruction for all students (K-12) for a minimum of 30 minutes.
- Well planned lessons incorporating a wide range of activities.
- A high level of participation by all students in each class.
- An emphasis on fun, enjoyment, success, fair play, self-fulfillment and personal health.
- Appropriate activities for the age and stage of each student.
- Activities which enhance cardiovascular systems, muscular strength, endurance and flexibility.
- A participation based intramural program.
- Qualified, enthusiastic teachers.
- Creative and safe use of facilities and equipment.

Recommended physical activity for health benefits — Canada’s Guides to Physical Activity
<http://www.phac-aspc.gc.ca/pau-uap/paguide/why.html>

1. Adults

Accumulate 60 minutes of physical activity every day to stay healthy or improve your health. Time needed depends on effort - as you progress to moderate activities, you can cut down to 30 minutes, 4 days a week.

Time needed depends on effort

Very Light Effort	Light Effort 60 minutes	Moderate Effort 30-60 min.	Vigorous Effort	Maximum Effort
Strolling Dusting	Light walking Volleyball Easy Gardening Stretching	Brisk Walking Biking Raking leaves Swimming Dancing Water aerobics	Aerobics Jogging Hockey Basketball Fast swimming Fast Dancing	Sprinting Racing
Range needed to stay healthy				

2. Older Adults

Accumulate 30 to 60 minutes of moderate physical activity most days. Minutes count - add it up 10 minutes at a time.

3. Children and Youth

The Guides recommend that inactive children and youth increase the amount of time they currently spend being physically active by at least 30 minutes more per day and decrease the time they currently spend on sedentary activities -- such as watching TV, playing computer games and surfing the Internet -- by at least 30 minutes per day.

The increase in physical activity should include a combination of moderate activity (such as brisk walking, skating and bike riding) with vigorous activity (such as running and playing soccer).

The guidelines recommend that inactive children and youth accumulate this increase in physical activity per day in periods of at least 5 to 10 minutes or more. Over several months, children and youth should accumulate at least 90 minutes more physical activity per day and decrease by at least 90 minutes per day the amount of time spent on sedentary activities like watching videos and sitting at a computer. http://www.phac-aspc.gc.ca/pau-uap/paguide/child_youth/partners/qa.html#3

Recreation - In the 1987 National Recreation Statement approved by Ministers at their national meeting recreation is defined as all of those activities in which an individual chooses to participate in his leisure time and is not confined solely to sports and physical recreation programs but includes artistic, creative, cultural, social and intellectual activities <http://lin.ca/Files/4467/statemen.htm>

Social marketing – Social marketing is the application of commercial marketing technologies to the analysis, planning, execution and evaluation of programs designed to influence the behaviour of target audiences in order to improve the welfare of individuals and society. Social marketing strategies are concerned firstly with the needs, preferences and social and economic circumstances of the target market. This information is used to ensure the most attractive benefits of a product, service or idea are offered and to address any barriers to the acceptance of that offering. Communicating with target market members about the relative advantages of what is offered is one element of social marketing, but also important are addressing issues of price, access, environmental support and the marketing of competing products. Effective social marketing, therefore, may include efforts to address the economic and regulatory environment. Success of a social marketing strategy is determined by its contribution to the well-being of the target market or society as a whole. (Source: Maibach E.W., Rothschild M.L., Novelli W.D. (2002) Social marketing. In Glanz K., Rimer B.K., Lewis F.M. (Eds.). Health Behaviour and Health Education: Theory, Research, and Practice 3rd edition (Jossey Bass, San Francisco, CA)

Sport – A form of leisure-time physical activity that is planned, structured, and either co-operative or competitive that can be enjoyed as an individual or on a team. (Source: PHAC) Sport's main objective is to improve skills, performance, and/or fitness. These objectives can be contested by personal goals, or a game, match, race, or other form of an event. Sport often includes specialized equipment and rules or standards. For the purposes of physical activity interventions such as this strategy, the term does not refer to motorized sports or games with no physical energy expenditure (e.g., game cards, finger-operated video games).

Sustainable health promotion actions -- Sustainable health promotion actions are those that can maintain their benefits for communities and populations beyond their initial stage of implementation. Sustainable actions can continue to be delivered within the limits of finances, expertise, infrastructure, natural resources and participation by stakeholders. Achieving the changes in risk factors and risk conditions that will result in health gain in populations requires the implementation of health promotion actions over years and decades. Attention needs to be

given, therefore, to designing actions, which have the potential for ongoing delivery and institutionalization after they have been evaluated and found to be effective. Health promoting policy, across a range of sectors, and modifying the physical environment in which people live have particular value because of their potential sustainability. The issue of sustainability also highlights the importance of capacity building in health promotion and the benefits of intersectoral collaboration to create shared responsibility for the ongoing implementation of strategies.

Target population – The target population is the entire group a researcher is interested in; the group about which the researcher wishes to draw conclusions.

Urban planning – A technical and political process concerned with the welfare of people, control of the use of land, design of the urban environment including transportation and communication networks, and protection and enhancement of the natural environment.

Youth – The HRM Physical Activity Strategy considers youth as those in adolescence—generally the age of 12 to 18 (or grades 7 to 12). Youth ages 13 to 18 are sometimes referred to as teenagers. In Nova Scotia, those in the later teen years are sometimes referred to as young adults. (Active Kids Healthy Kids Strategy: A Physical Activity Strategy for Children, Youth and Families, Nova Scotia Health Promotion and Protection, 2007)



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Community Health Indicator Survey

TO: Colleagues

FROM: Working Group of Population Health Committee of the Board
(Dr. Gaynor Watson-Creed, Leslie-Anne Campbell, Dr. Stephen Kisely, Mike Kivell, Kathleen Martin, Mary Russell)

RE: Community Health Indicators

DATE: November 20, 2007

Earlier this year the Population Health Committee of the Board struck a working group to develop a set of community health indicators. These indicators are to be utilized by Capital Health (and IWK Health Centre where appropriate) to help guide its decision making (strategic, business, program).

Capital Health monitors many acute care processes through indicators such as wait times for surgery, medication errors and infection rates. However, it does not have a systematic process for monitoring population health. The first step in this regard is the development of a set of evidence-based community health indicators.

The selection of such indicators is not without challenges. If too many are identified, the health information of the population is diluted and the list becomes unmanageable; too few and you do not have an accurate picture of the health of the population.

We are asking key stakeholders, like yourself, for help in refining the attached list. This list was developed following much discussion and a review of the evidence that links each indicator to health outcomes. The criteria used to select the indicators is also attached.¹ Key in the selection of indicators was the availability of data.

This is a first step in the process of identifying community health indicators for utilization by Capital Health. Once feedback is received from key stakeholders and consolidated, we will be consulting with a wider audience.

Please review the list of indicators and use the space provided to answer the questions below. Return to Mary Russell via email at mary.russell@cdha.nshealth.ca or 3845 Joseph Howe Drive, Suite 302, Halifax, NS B3L 4H9, by December 5, 2007.

1. As we move forward with this initiative, other selection criteria may be incorporated to encourage work in areas for which there is no current data or evidence of effective interventions.

1. Do we have the right indicators? What is missing? What should be deleted? (Please consider the criteria used to select the indicators – attached)
2. Which two (2) indicators in each category (except morbidity/mortality section) are most important for Capital Health to initiate action to improve? *(As these indicators are being developed to help guide Capital Health's priorities please consider areas that you feel are within Capital Health's ability to influence).*

General		
Infant/Children		
Youth		
Adult		
Senior		

3. On a scale of 1 to 5, has the information provided and discussions through QUEST increased your awareness of the health status of our community and the link between the indicator and health?

Not aware 1 2 3 4 5 Very aware

What other information would have been helpful?

4. On a scale of 1 to 5, do you think monitoring and reporting these indicators would help guide the Board and organization in its strategic and business decision-making?

Not helpful 1 2 3 4 5 Very helpful

5. Comments:

Thank you for your assistance

Criteria Used to Identify Indicators*

The following criteria were considered in assisting us to narrow the list of indicators. These criteria provide a guide only. Due to various limitations, not all indicators meet each of the criteria.

- **Linked to one or more of the strategic priorities of Capital Health-** process of identifying what is important to measure may influence or play a role in the refinement of CDHA's strategic priorities.
- **Actionable by Capital Health:** Capital Health can influence a change.
- **Feasible to measure and report:** Measurable in a practical and cost efficient way, and derived from available and accessible management information systems.
- **Evidence-informed** – evidence exists that links a change in the indicator to improved health outcomes; strength of evidence varies depending on indicator.
- **Easily Understood and Used:** Easy to understand by the intended users (in this case, the CDHA board, senior leadership team, staff).
- **Reliable and Valid:** Scientifically sound. The concept intended to be measured is being done so consistently (reliability) and accurately (validity).
- **Sensitive and Specific:** Responsive and accurate for the purpose that the indicator is used.
Sensitive – readily responding to external stimuli.
Specific – definite, having a distinct effect. If we make a change, we should readily see it in an indicator. Alternatively, if we see an indicator change, it can be correlated to an action/initiative that was undertaken.
- **Comparable:** Comparable across jurisdictions (e.g., other DHAs, provinces, nationally) and over time.

In addition, the entire set of indicators should, together:

- **Measure activity and progress of population health strategies.**
- **Provide a balanced picture across objectives / program areas / funding pools, across types of indicators (e.g., output, outcome, quality, etc.) and between good and bad news.**
- **Have minimal overlap and duplication, and provide information that is measurable and useable in an ethical and legal way.**

*Adapted from Saskatchewan Health

As we move forward with this initiative, other selection criteria may be incorporated to encourage work in areas for which there is no current data or evidence of effective interventions.

Community Health Indicators



General (Apply to all age groups)

Environment	Rationale	Canada	NS	CDHA
• <i>[Indicators under development]</i>				
Food insecurity				
• Percentage of households who are moderately or severely food insecure ¹	<i>Assured access to sufficient food at all times is necessary for an active, healthy life.</i>	9.2%	14.6%	15.0%
Housing affordability				
• Percent of renters spending ≥30% of total income on shelter costs ²	<i>Spending ≥30% of total income on shelter may leave inadequate funds for other necessities.</i>	39.4%	45.4%	43.5%
Poverty				
• Percentage low income families ³	<i>Low income is generally associated with poor health outcomes.</i>	12.8%	13.4%	11.9%
• Percentage of families headed by female lone parent ³	<i>Female lone parent families are at higher risk for poverty.</i>	12.7%	13.9%	14.1%
Regular medical doctor				
• Proportion of the population who report they have a regular medical doctor ⁴	<i>Lack of a regular medical doctor may indicate poor or limited access to primary care services.</i>	87.7%	94.4%	96.0%
Unemployment				
• Percentage of population 15+ years unemployed relative to total labour force ⁵	<i>Unemployment indicates socially disadvantaged status, associated with generally poor outcomes.</i>	4.9%	6.7%	4.9%

Infant/Child (0-11 years)

	<i>Rationale</i>	Canada	NS	CDHA
Asthma				
• Hospital admission rate for asthma	<i>Asthma admission rates reflect the quality of asthma management in the community.</i>	[data under development]		
Breast feeding initiation				
• Percentage of mothers breastfeeding at time of discharge from hospital ^{6,7}	<i>Breastfeeding has a major impact on infant well being in several domains.</i>	81.9%	65.0%	72.0%
Early childhood development				
• <i>[Early Development Index (EDI)- indicator under dev't]</i>	<i>Early childhood development influences a range of health outcomes.</i>	[data under development]		
Exposure to second hand smoke				
• Percentage of children regularly exposed to second hand smoke ⁸	<i>Exposure to smoke in childhood is a predictor of poor outcomes in several domains.</i>	9.2%	10.5%	N/A [†]
Immunization				
• Percent of eligible children (aged 4-6) who had received MMR by time of school entry ⁹	<i>Immunizations are necessary for protection from vaccine preventable diseases.</i>	93.0%	84.9%	87.0%
Infant mortality				
• Number of deaths of children <1 year of age per 1,000 live births ^{10,11}	<i>Infant mortality rates reflect economic, social, and environmental conditions, including health care.</i>	5.3	4.6	5.0
Injuries				
• <i>[Indicator under development]</i>	<i>Injuries are preventable causes of morbidity and mortality.</i>	[data under development]		
Large for gestational age				
• Birth weight greater than 90th percentile for gestation age per 100 live births ^{6,7}	<i>These babies experience higher rates of morbidity and mortality.</i>	12.0	16.0	18.0

Infant/Child (0-11 years) cont'd

	<i>Rationale</i>	Canada	NS	CDHA
Oral health				
• Decayed, missing, filled (DMF) teeth index ¹²	<i>Poor oral health is often associated with general poor health and lack of access to dental care.</i>	N/A	N/A	2.5%
Small for gestational age				
• Birth weight less than 10th percentile for gestation age per 100 live births ^{6,7}	<i>These babies experience higher rates of morbidity and mortality.</i>	7.9	8.5	7.5
Youth (12-19 years)				
Binge drinking				
• Percent of youth 12-19 reporting drinking 5 or more drinks on at least one occasion in the past 12 months ¹³	<i>Binge drinking is associated with other high risk behaviours, including driving and unprotected sex.</i>	27.7%	32.9%	32.8%
Drug use				
• Percent of students in grades 7,9,10, and 12 reporting cannabis use more often than once/month ¹⁴	<i>Cannabis is the most commonly used illicit substance.</i>	N/A	(M) 8.5% (F) 12.7%	N/A
Fruit/vegetable consumption				
• Percent of individuals aged 12+ years reporting consumption of fruit/vegetables below requirement ¹⁵	<i>Fruit/vegetables are important for the prevention of chronic disease.</i>	N/A	66.7%	64.4%
Immunization				
• Percentage of eligible youth (aged 14-16) who received Adacel (for Tdap) during grade 9 or 10 school year ⁹	<i>Immunizations are necessary for protection from vaccine preventable diseases.</i>	N/A	92.4%	90.0%
Injuries				
• <i>[Indicator under development]</i>	<i>Preventable causes of morbidity/mortality.</i>	[Data under development]		
Obesity				
• Percent of youth 12-17 years with self-reported BMI >30 ¹³	<i>Obesity is a major independent risk factor for the development of chronic disease.</i>	4.4%	4.6%	suppressed†

Youth (12-19 years) (cont'd)	Rationale	Canada	NS	CDHA
Overweight				
• Percent of youth 12-17 years with self-reported BMI 25.0-29.9 ¹³	<i>Overweight is a major risk factor for obesity and the development of chronic diseases.</i>	13.5%	17.9%	17.4%
Physical inactivity				
• Percent of youth 12-19 years reporting level of physical activity below recommendation ¹³	<i>Inactivity places many youth at risk for overweight and obesity.</i>	28.3%	27.2%	27.4%
		(M) 22.5%	17.7%	14.5%
		(F) 34.3%	37.0%	40.9%
• Percent of grade 11 youth with measured levels of physical activity below recommendation ¹⁶	<i>Inactivity places many youth at risk for overweight and obesity.</i>		(M) 91.3%	
			(F) 99%	
Problem gambling				
• Percent of students in grades 7,9,10, and 12 reporting gambling activities at problem levels ¹⁴	<i>Problem gambling may compromise, disrupt, or damage family, personal, or vocational pursuits.</i>	N/A	2.1%	N/A
Sexually transmitted infections (STI)				
• Rate/100,000 of reported cases of genital <i>Chlamydia trachomatis</i> among youth aged 15-19 years ^{17,18}	<i>Chlamydia infections are one of most common STIs, and are often markers for other STIs.</i>	(M) 169.6	211.8	239.2
		(F) 1109.1	1480.7	2071.7
• Rate/100,000 of reported cases of genital <i>Chlamydia trachomatis</i> among youth aged 10-14 years ^{17,18}	<i>STI infections among youth <14 years are of concern due to probability of abuse.</i>	(M) 2.0	3.1	7.9
		(F) 47.6	36.0	47.6
Smoking				
• Youth aged 15-24 years who reported being a current smoker (includes daily and occasional smokers) ⁸	<i>Smoking is a major cause of preventable death, with most becoming addicted as teens.</i>	18.6%	21.8%	N/A
Teen pregnancy				
• Rate/1,000 women of live births, fetal loss and induced abortions among women <20 years of age ^{19,20}	<i>Teen pregnancy is associated with childhood poverty, low birth weight, and poor early dev't.</i>	28.8	23.9	35.0

Adult (20-64 years)

	<i>Rationale</i>	Canada	NS	CDHA
Binge drinking				
<ul style="list-style-type: none"> Percent of population 12+ years reporting drinking 5 or more drinks on at least 1 occasion in past 12 months¹³ 	<i>Binge drinking is associated with other high risk behaviours (e.g., unprotected sex and DUI)</i>	22%	26%	27%
Colorectal screening				
<ul style="list-style-type: none"> [Note: NS has just implemented a colorectal screening program- data will be available in the future.] 	<i>Colorectal screening is an important strategy for early detection of colorectal cancer.</i>	N/A	N/A	N/A
Education less than high school				
<ul style="list-style-type: none"> Percent of individuals 20+ years who have not completed high school⁵ 	<i>Lack of high school completion leads to lower employment, lower SES and poorer health.</i>	27.9%	31.7%	23.2%
Fruit/vegetable consumption				
<ul style="list-style-type: none"> Percent individuals aged 12+ years reporting consumption of fruit/vegetables below requirement¹⁵ 	<i>Fruit/vegetables are important for the prevention of chronic diseases.</i>	N/A	66.7%	64.4%
Injuries				
<ul style="list-style-type: none"> [Indicator under development] 	<i>Preventable causes of morbidity/mortality.</i>	[data under development]		
Literacy				
<ul style="list-style-type: none"> Percent of individuals 16+ years of age scoring <3 on International Adult Literacy & Skills Survey²¹ 	<i>Literacy is a key determinant of health</i>	47.7%	44.8%	N/A
Mammography				
<ul style="list-style-type: none"> Percent of women 50-69 years who reporting having a mammogram within the past 2 years¹³ 	<i>Screening mammography is an important strategy for early detection of breast cancer.</i>	50.8%	49.9%	49.8%
Obesity				
<ul style="list-style-type: none"> Percent of adults aged 18+ years who reported a BMI >30¹³ 	<i>Obesity is a major independent risk factor for chronic disease.</i>	15.5%	20.7%	18.6%

Adult (20-64 years)

	<i>Rationale</i>	Canada	NS	CDHA
Overweight				
• Percent of adults aged 18+ years who reported a BMI between 25.0 and 29.9 ¹³	<i>Overweight is a significant risk factor for obesity and chronic disease.</i>	33.4%	35.8%	32.5%
Pap smear				
• Percent of women 18-69 years who reported having a Pap smear within the past 3 years ¹³	<i>Pap tests detect pre-cancerous lesions before cancer of the cervix develops.</i>	72.8%	81.0%	83.6%
Physical inactivity				
• Percent of population 12+ years reporting level of physical activity below recommendation ¹³	<i>Physical inactivity increases risk for chronic disease.</i>	46.7% (M) 44.1% (F) 49.3%	49.6% 47.6% 51.5%	46.2% 44.4% 47.8%
Problem gambling				
• Percent adults reporting gambling behaviours classified as moderate or severe problems ²²	<i>Problem gambling creates negative consequences for the gambler, social network, or community.</i>	3.3%	2.1%	2.2%
Smoking				
• Population 12+ years reported being a current (daily or occasional) smoker ¹³	<i>Smoking is a primary cause of preventable death in developed countries.</i>	21.7%	22.6%	21.4%
Tobacco use during pregnancy				
• Percent of women who smoked while pregnant within the previous 5 years ¹³	<i>Smoking is associated with increased infant morbidity and mortality.</i>	17.0%	17.0%	N/A

Older Adult (65+ years)

Workplace health (Capital Health)

- [Indicator under development]

Rationale

Capital Health should lead by example as a healthy workplace.

Canada

NS

CDHA

[data under development]

Falls

- Rate/1,000 of fall-related hospitalizations among adults aged 65-69 years²³
- Rate/1,000 of fall-related hospitalizations among adults aged 85+ years²³

Falls dramatically increase the odds of home care, hospitalization, and institutionalization.

Falls dramatically increase the odds of home care, hospitalization, and institutionalization.

N/A	(M)	5	N/A
	(F)	6	
N/A	(M)	37	N/A
	(F)	56	

Home care wait times

- Avg time between assessment and commencement of home care

Timely home care maintains functional independence.

[data under development]

Influenza immunization

- Percent of community residents 65+ years of age who received influenza vaccine 1998-2007⁹

Influenza infections are preventable causes of respiratory illness and death among older adults.

N/A	66.7%	68.6%
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Literacy

- Percentage of individuals 16+ years of age scoring <3 on International Adult Literacy & Skills Survey²¹

Literacy is a key determinant of health

47.7%	44.8%	N/A
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Physical inactivity

- Percentage of population aged 65+ years reporting level of physical activity below recommendation¹³

Physical inactivity increases the risk of chronic disease (e.g., heart disease, cancer, diabetes).

53.3%	64.7%	62.1%
(M) 5.8%	58.3%	57.8%
(F) 9.3%	69.7%	65.3%

Pneumococcal immunization

- [Indicator under development]

Pneumococcal infections are preventable causes of respiratory illness and death among older adults.

[data under development]

Morbidity and Mortality

Infant/Child

	<i>Rationale</i>	Canada	NS	CDHA
Morbidity				
<ul style="list-style-type: none"> Most frequent reasons for visit to doctor²⁴ (% of all physician visits within age group) 	<i>Males:</i>	1. Vaccinations	N/A	8.0%
		2. Acute upper respiratory infections	7.2%	7.6%
		3. Healthy infant/child check-ups	6.8%	6.8%
	<i>Females:</i>	1. Vaccinations	N/A	8.4%
		2. Acute upper respiratory infections	7.7%	7.9%
		3. Healthy infant/child check-ups	7.1%	7.0%
Mortality				
<ul style="list-style-type: none"> Most common cause of death/100,000 population²⁵ 	<i>Fetal/newborn disorders</i>	N/A	5.6	12.4

Youth

Morbidity				
<ul style="list-style-type: none"> Most frequent reasons for visit to doctor²⁴ (% of all physician visits within age group) 	<i>Males:</i>	1. Acne	N/A	5.9%
		2. Asthma	4.5%	5.1%
		3. Contact with communicable diseases	3.9%	4.3%
<ul style="list-style-type: none"> Most frequent reasons for visit to doctor²⁴ (cont'd) 	<i>Females:</i>	1. Contraception	N/A	8.3%
		2. Acne	3.4%	4.0%
		3. Acute upper respiratory tract inf'ns	3.2%	3.6%
Mortality				
<ul style="list-style-type: none"> Most common cause of death/100,000 population²⁵ 	<i>Transport accidents</i>	N/A	14.6	11.6

Adult

Morbidity				
<ul style="list-style-type: none"> Most frequent reasons for visit to doctor²⁴ (% of all physician visits within age group) 	<i>Males:</i>	1. High blood pressure	N/A	5.8%
		2. Diabetes	4.6%	4.1%
		3. Anxiety	3.1%	3.5%
	<i>Females:</i>	1. Pap smears	N/A	4.3%
		2. Anxiety	3.6%	3.7%
		3. High blood pressure	4.0%	3.5%

Morbidity and Mortality (cont'd)

Adult	Rationale	Canada	NS	CDHA
	<i>Males:</i> 1. <i>Ischaemic heart disease</i>	N/A	47.9	40.7
	2. <i>Lung cancer</i>		31.4	22.9
	3. <i>Intentional self-harm</i>		17.5	14.1
	<i>Females:</i> 1. <i>Lung cancer</i>	N/A	27.7	26.6
	2. <i>Ischaemic heart disease</i>		16.7	11.8
	3. <i>Breast Cancer</i>		16.7	11.8

Older Adult

Morbidity

<ul style="list-style-type: none"> Most frequent reasons for visit to doctor²⁴ (% of all physician visits within age group) 	<i>Males:</i> 1. <i>High blood pressure</i>	N/A	8.2%	8.1%
	2. <i>Diabetes</i>		5.8%	5.8%
	3. <i>Immunization</i>		5.3%	5.7%
	<i>Females:</i> 1. <i>High blood pressure</i>	N/A	10.3%	10.3%
	2. <i>Immunization</i>		5.9%	6.3%
	3. <i>Diabetes</i>		4.4%	4.1%

Mortality

<ul style="list-style-type: none"> Most common causes of death/100,000 population²⁵ 	<i>Males:</i> 1. <i>Ischaemic heart disease</i>	N/A	951.4	807.9
	2. <i>Lung cancer</i>		476.5	420.9
	3. <i>Chronic respiratory disease</i>		406.1	377.3
	<i>Females:</i> 1. <i>Ischemic heart disease</i>	N/A	675.3	610.1
	2. <i>Stroke</i>		352.0	351.7
	3. <i>Diseases-central nervous system</i>		289.6	305.1

About Capital Health:

- Nearly 395,000 men, women, and children live here
- 51% are female, 49% are male
- 0.67% are First Nations, 3.4% are African Nova Scotians
- 93% speak English, 3% speak French
- 4.6% of residents are immigrants
- Approximately 4,100 babies are born here each year
- The district includes the Halifax Regional Municipality, West Hants, and a portion of East Hants County
- Capital Health has an area of 6,815 km², from Windsor to Sheet Harbour
- CH has the highest density population in the province

Comments:

Environment- other environmental indicators will be defined following 'data gathering' in this area. (May include municipal drinking water, water advisories, private well water testing, water quality of beaches, air quality.)

Literacy- Level 3 in prose literacy is the desired threshold for coping with the increasing skill demands of a knowledge society.

Home care wait times: Data is dependent upon type of care required (e.g., palliative, nursing, homemaker) and location of patient.

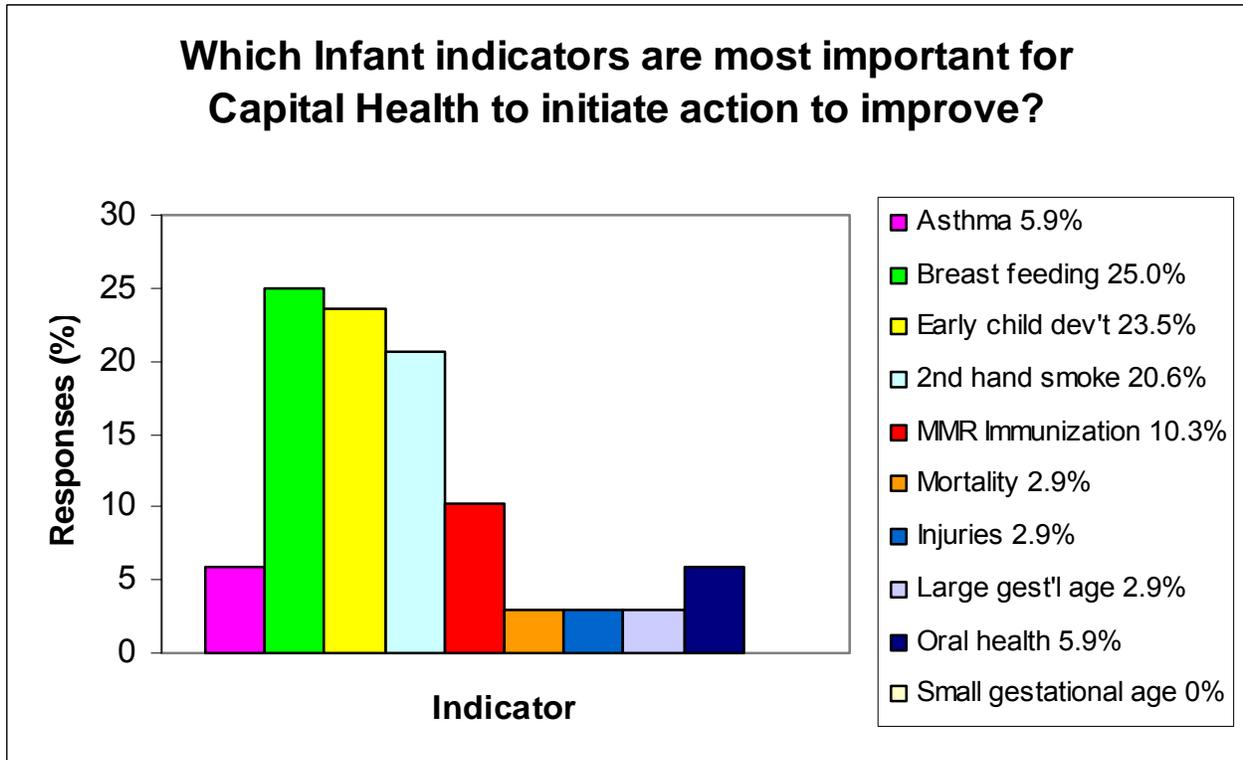
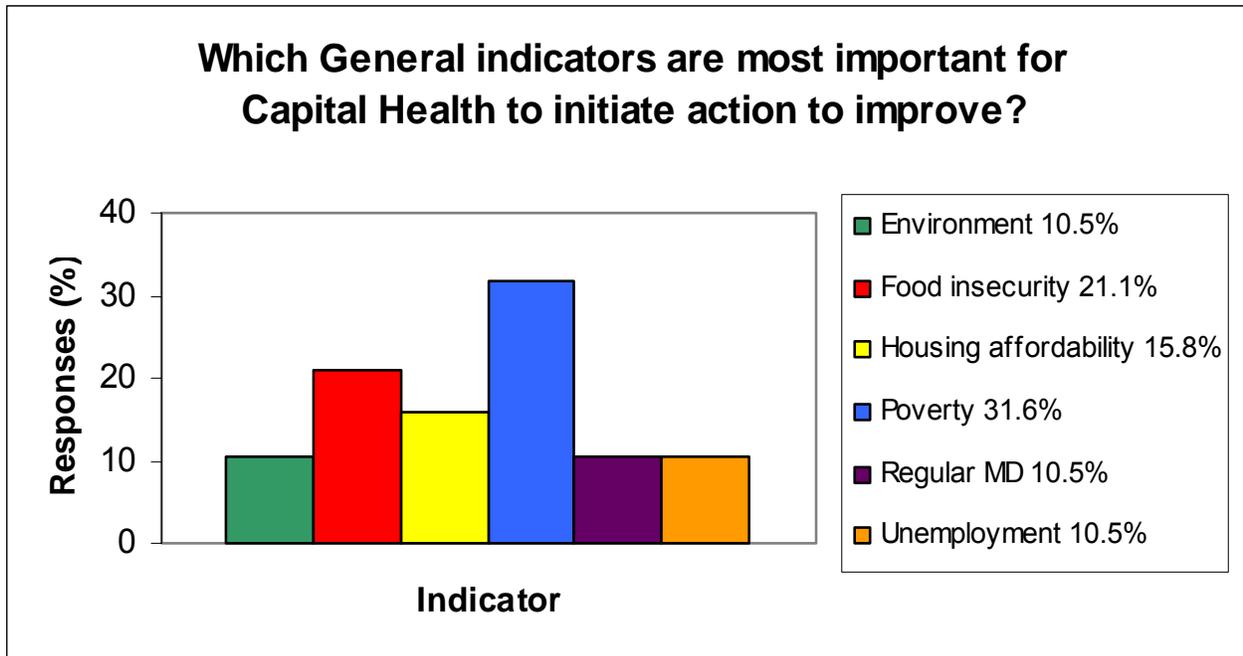
† **N/A= Not available.**

‡ **Suppressed= Numbers too small to report.**

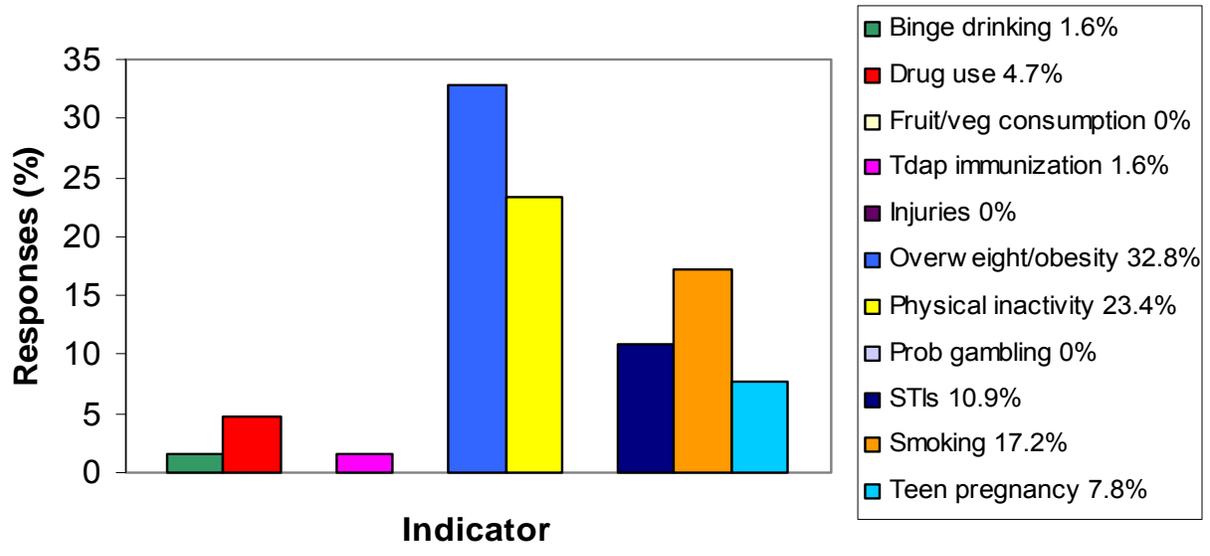
Data Sources: (Data used are most recent available)

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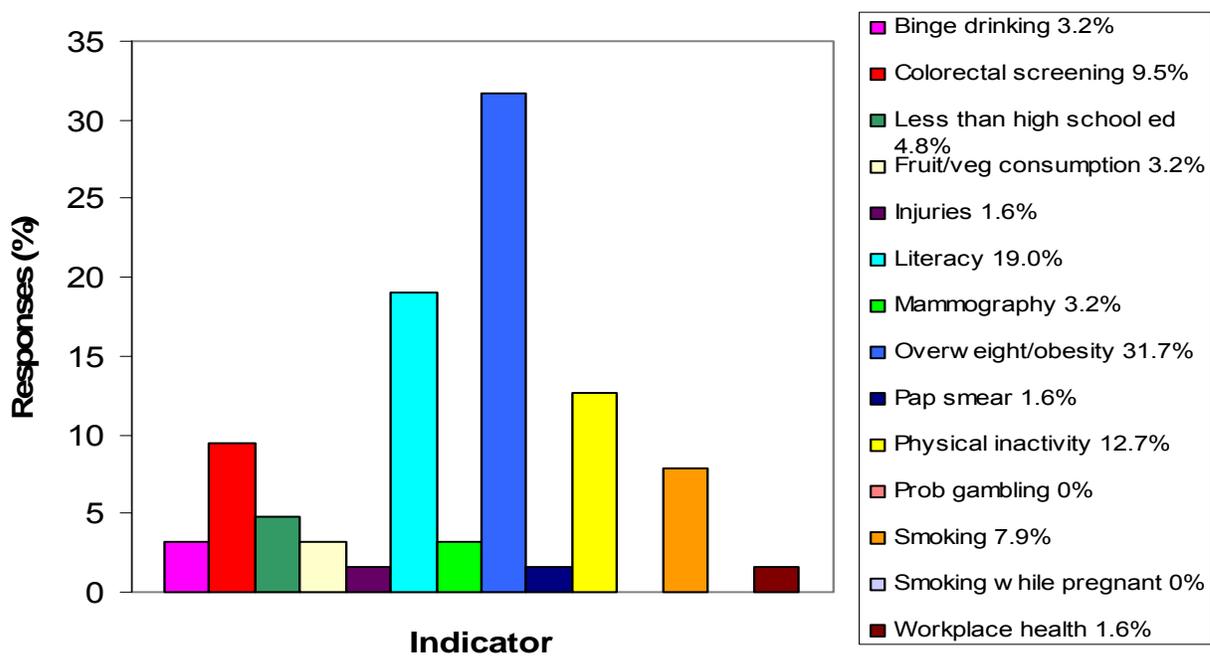
Results – Community Health Indicator Survey



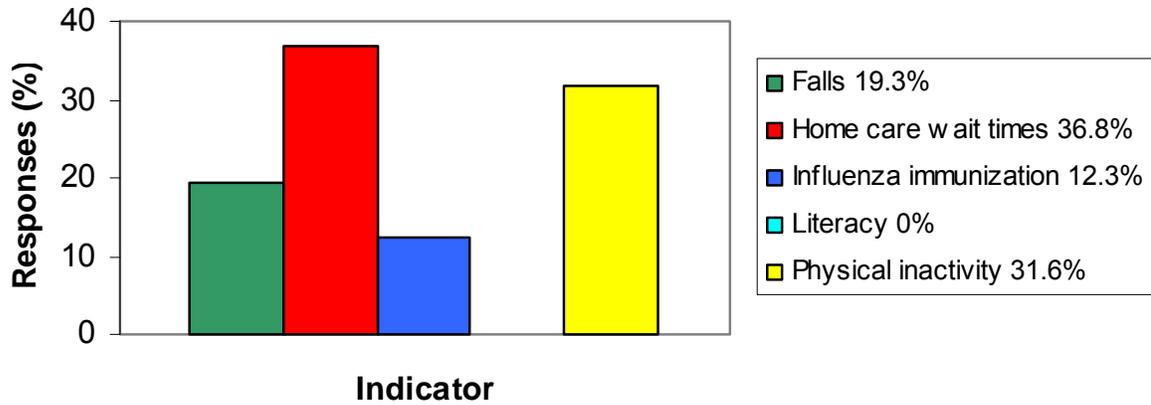
Which Youth indicators are most important for Capital Health to initiate action to improve?



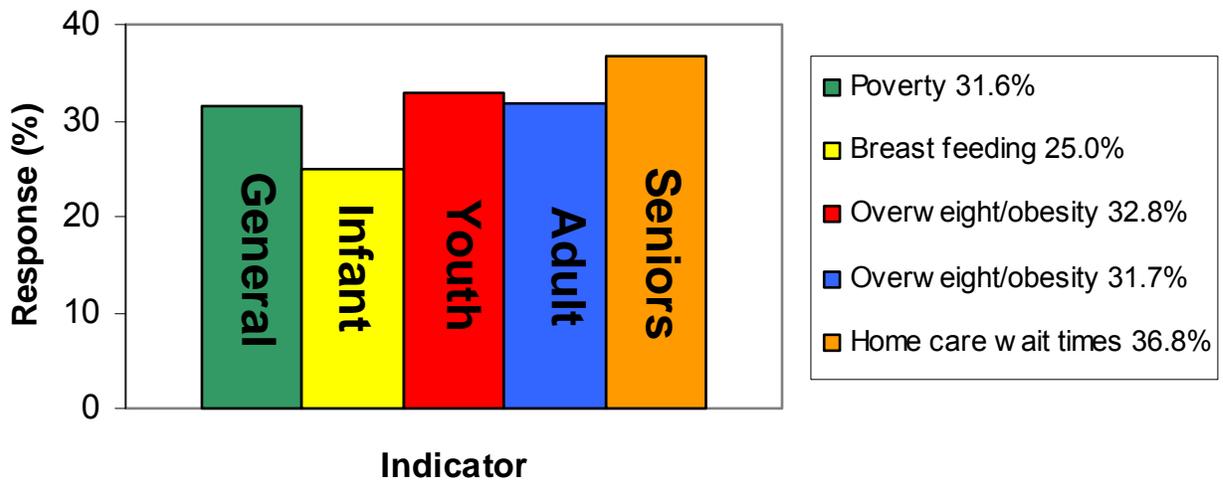
Which Adult indicators are most important for Capital Health to initiate action to improve?



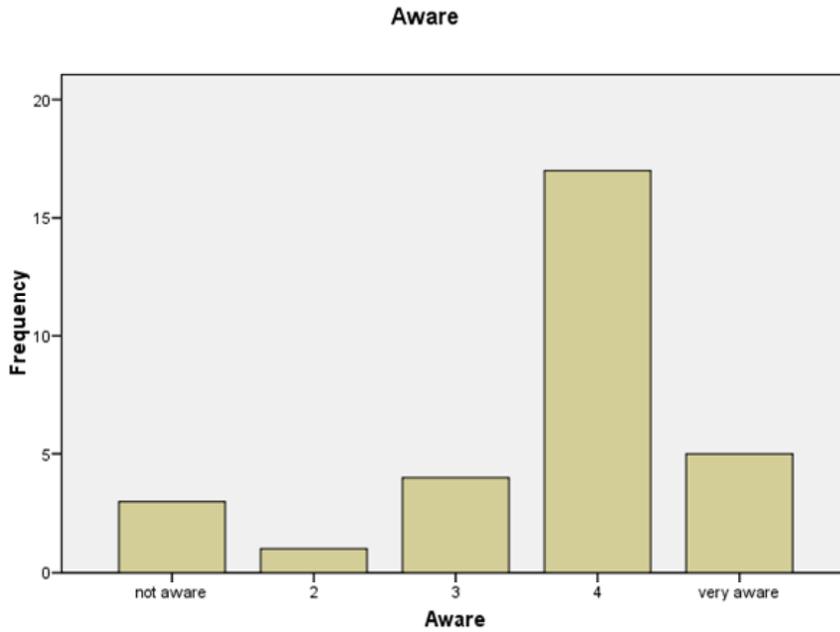
Which Seniors indicators are most important for Capital Health to initiate action to improve?



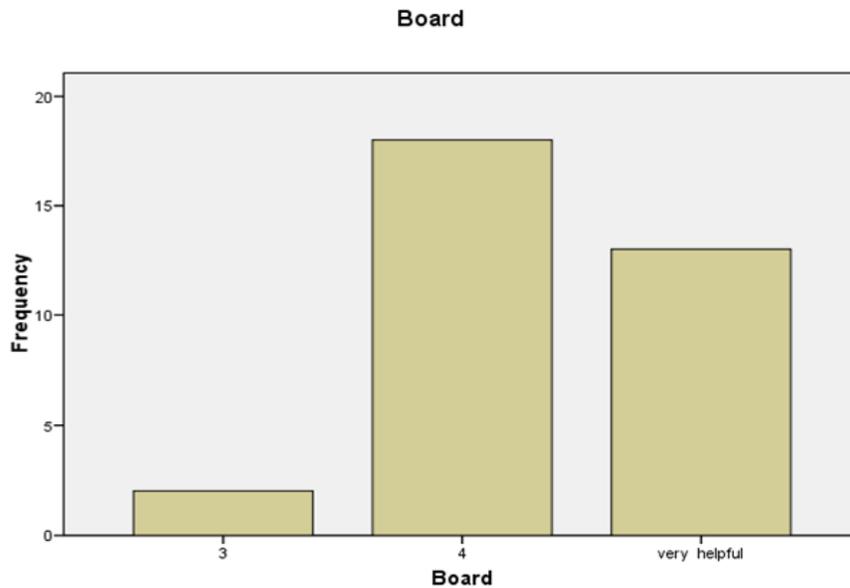
Priority Indicators



On a scale of 1 to 5, has the information provided and discussions through QUEST increased your awareness of the health status of our community and the link between the indicator and health?



On a scale of 1 to 5, do you think monitoring and reporting these indicators would help guide the Board and organization in its strategic and business decision-making?



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