Public Health 101: An Introduction to Public Health

November 2007

An Initiative from the Atlantic Provinces Public Health Collaboration

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Table of Contents

List of Tables

Introduction

PH101: An Introduction to Public Health was created by public health leaders in the Atlantic Provinces who worked together as members of the Public Health Orientation Working Group. The work was jointly funded by the Public Health Agency of Canada and Nova Scotia's Department of Health Promotion and Protection.

This project was organized to create an initial orientation module that offers an introduction to public health. Although beyond the scope of this project, the Working Group recognized that future work is required to create a complete public health orientation process. It is hoped this module can be incorporated into a full public health orientation process once it is developed.

Please find below the module plan for Public Health 101.

Public Health 101 Orientation Module Plan

Description of the Module

- This module is called *PH101: An Introduction to Public Health*. The module is available to participants as a Microsoft Word document or as a pdf file. The module contents are available in both French and English, based primarily on Canadian literature, and are written with the assumption that the reader has an educational background in a health related field.

Purpose

The module was developed for use with the following target audiences:

- New public health practitioners who are completing orientation, to provide them with an introduction to public health (primary target audience); and
- Existing public health practitioners to generate discussion about issues and promote the use of common language in the public health field (secondary target audience).

Expected Outcomes

By completing the module, participants should gain new knowledge or reflect on their current understanding of public health by exploring content related to questions such as:

- What is public health?
- What is the history of public health in Canada?
- How does public health differ from other sectors in health?
- What are public health approaches, functions and principles?
- What are the core competencies for public health practice in Canada?

Methods

- Participants are provided an electronic and/or hard copy of the module;
- Participants are expected to take a self-directed approach to learning and may choose to read the module on their own or with other colleagues;
- It is suggested that participants record questions and/or issues they discover related to the module content while they are reading the document. Notes pages are provided at the back of the module for this purpose;
- Participants are encouraged to discuss with colleagues the issues and questions they have recorded about the module; and
- Participants are asked to complete an evaluation of the module and discuss the evaluation with a supervisor.

Resources

- Time is required to read through the module. The estimated time for completion of the module will vary for participants, and may range from 4 hours to 8 hours. Some users may prefer to spend concentrated time completing the module in full, while others may choose to complete specific sections of the module over a more extended time period.
- Access to the Internet is beneficial, as this allows the user to access and read many additional resources online that are suggested throughout the module.

Evaluation

- Phase One – Pilot Testing: In February, March and April of 2007, 46 public health practitioners were provided with a draft of the orientation module and asked to provide written feedback regarding its contents. The draft module was available in both French and English. The pilot test included participation from new public health practitioners who had been hired to work in public health for the first time, and public health practitioners with 1+ years experience working within their current public health positions. Written feedback was received from participants in each of the four Atlantic provinces. This feedback was reviewed by the Public Health Orientation Working Group and revisions were made to the orientation module, incorporating much of the feedback received from the pilot test participants.

- Phase Two – Ongoing Evaluation: At the end of the module an evaluation is provided, and participants are encouraged to complete the evaluation and discuss it with their supervisor. The results of these evaluations will also be used to revise and improve the module as required.

What is Public Health?

People who work in the diverse field of public health actively contribute to building and sustaining healthy communities. In your community today, public health practitioners may be found:

- Working to increase public awareness regarding the importance of wearing bicycle helmets, or using car seats for children;
- Exploring the health effects experienced by people who have been exposed to a known environmental hazard;
- Monitoring information to identify outbreaks and trends with certain illnesses and diseases, and intervening to prevent the spread of illness and disease;
- Creating policies in schools and child care centres to better ensure healthy eating practices are established early in life;
- Advocating for sustainable housing so families can live more safely and comfortably;
- Ensuring that water and food supplies are safe for consumption; and
- Providing services amidst natural and human made disasters.

Public health has been described as:

> "…the science and art of promoting health, preventing disease, prolonging life and improving quality of life through the organized efforts of society. As such, public health combines sciences, skills, and beliefs directed to the maintenance and improvement of health of all people through collective action. The programs, services, and institutions involved tend to emphasize two things: the prevention of disease, and the health needs of the population as a whole" (p. 46).[1]

While the term "public health" can be used in slightly different ways, for the purposes of this module, public health is primarily being used to refer to the set of government funded services whose intent is to improve and protect the health of the public. There are a core set of programs and services that tend to be common from one jurisdiction to another:

- Prevention and control of chronic diseases and injuries
- Prevention and control of communicable diseases
- Environmental health
- Healthy development throughout the lifecycle including maternal/child health.

Table 1 provides a few suggestions regarding additional resources to access for general public health information.

Table 1: General Public Health Information: Additional Resources

Glossary of Terms Relevant to Public Health Competencies[2] The Public Health Agency of Canada has provided a glossary of terms relevant to public health competencies, compiled by Dr. John M. Last, and available at http://www.phac-aspc.gc.ca/php-psp/core_competencies_glossary_e.html
Canadian Coalition for Public Health in the 21st Century[3-7] This is a webpage within the Canadian Public Health Association's website, that contains many links to documents, reports and fact sheets related to public health. This page can be found at: http://www.cpha.ca/coalition/

Public Health in Atlantic Canada: A Discussion Paper[8]

This document was created in 2005 for the Public Health Agency of Canada, to help outline some of the issues, challenges and successes specific to public health in Atlantic Canada. This report can be accessed at: http://www.phac-aspc.gc.ca/canada/regions/atlantic/Publications/PH_Discussion/public_health_2005_e.pdf

The Public Health Workforce

The public health system relies on a highly skilled workforce to provide consistent and effective services to Canadians. It has been recognized that there is limited quantitative data available on the state of public health human resources in Canada, and work is being done to improve this.[1, 9]

The practice of public health requires collaboration between many different providers. These providers work together to offer services that address both the needs of populations as well as individuals.[9] There is no single employer of all the providers contributing to public health in a community; providers need to know who to connect with in various organizations to provide effective services to the population. Table 2 provides an overview of many of the providers working within the public health system.[9]

Table 2: The Public Health Workforce

• Anthropologists • Audiologists • Biostatisticians • Communication officers • Community development workers • Community health representatives in Aboriginal communities • Community lay health visitors • Dental assistants • Dental hygienists • Dentists • Dietitians • Engineers • Epidemiologists • Geographers • Health educators • Health promotion specialists	• Infection control practitioners • Infectious disease specialists • Laboratory personnel/technicians • Lawyers • Licensed practical nurses • Medical microbiologists • Medical officers of health • Nurses • Nutritionists • Occupational therapists • Pharmacists • Physicians • Physiotherapists • Public health inspectors • Sociologists • Speech-language pathologists • Veterinarians

There are three types of involvement with public health that these disciplines might have:

- Some of the activities routinely performed by a practitioner are contributing to overall public health goals. For example, a practitioner seeing a patient/client in their office and providing tobacco cessation counseling is contributing to the overall public health goal of reducing tobacco use.
- A practitioner may be involved in delivering a specific service in a public health setting. For example a lawyer from the local municipality or provincial government may provide legal advice regarding application of public health regulations (e.g. exposure to tobacco smoke in public places, isolation of an infected individual who poses a risk to others). A family physician my work part-time in the organization's healthy sexuality clinic.
- Many practitioners have careers in public health working for public health organizations at local/regional, provincial and national levels.

There are many human resources issues facing each of the provider groups listed above. To illustrate some of the issues in the public health system today, examples from a few provider groups are listed below:

- It is estimated that public health nurses make up approximately 30% of the public health workforce.[1] Public health is experiencing a shortage of nurses similar to the other sectors within the health system, and recruitment is especially difficult in rural and remote communities.[1] In many parts of Canada, public health practitioners have been devolved from provincial roles and integrated into existing local or district health authorities. It has been reported that this integration has sometimes led to a loss of identity for public health nursing and its focus on the health of populations.[1]

- There are approximately 200 physicians working as Medical Officers of Health throughout the country, and just over 20 of these are employed in Atlantic Canada.[1] It has been estimated that approximately 30% of the Medical Officers of Health are eligible for retirement within the next decade, and concern exists there is a limited supply of physicians trained in public health to fill the vacancies being created.[1]

- Canadian epidemiologists' present contributions related to chronic diseases and health services research are invaluable to the work of public health. Recommendations to strengthen the public health workforce in Canada include the need to increase the number of epidemiologists completing infectious disease research and outbreak investigation, to ensure all aspects of public health are benefiting from the expertise epidemiologists have to offer.[1]

Please refer to Table 3 for a link to more information regarding public health human resources planning.

Table 3: Public Health Human Resources

Building the Public Health Workforce for the 21st Century[9]

This document proposes the implementation of a collaborative public health human resources planning framework to be implemented across Canada. It is available at: http://www.phac-aspc.gc.ca/php-psp/pdf/building_the_public_health_workforce_fo_%20the-21stc_e.pdf

What is the History of Public Health in Canada?

For centuries, public health throughout the world has been recognized as having concern for the health of humans. It has also been recognized that the treatment of illness in individuals is different than public health's focus on preventing disease and protecting the health of a population.[10]

Throughout the late 1800s and first few years of the 1900s, the formal public health system was not well developed in Canada. Despite the establishment of boards of health, many public health providers had little to no formal training.[1, 11] They were primarily focused on dealing with outbreaks of communicable diseases, quarantines, immunizations, and epidemics of small pox and cholera.[1]

Public health has always relied on health information to investigate reasons for poor health and to help make decisions. In the early twentieth century, much of public health's focus was on the prevention of communicable diseases, sanitation, and maternal and child health.[12] Many areas in the country had unsafe water supplies and unsanitary sewage and waste disposal.[11] Outbreaks of typhoid fever, smallpox, diphtheria, German measles and whooping cough continued to occur, which resulted in many pre-mature deaths and much chronic illness.[11]

As the twentieth century evolved, vaccinations became more readily available, although the public was often resistant to receiving them.[11] However, the local boards of health worked to complete health inspections and implement regulation to protect the health of the public.[1] Immunizations, pasteurization, the containment of tuberculosis, the control of sexually transmitted diseases, and child and maternal health all experienced substantial advancements that saved lives and helped to increase life expectancy for Canadians.[1, 11]

Following World War II and into the 1950s, clinical medicine improved substantially in its ability to treat disease. Surgical techniques advanced and the public became focused on the possibilities that clinical medicine had to offer the individual.[1] At this time public health appeared to take a background position to clinical medicine.[1] The majority of funding for health

became directed towards personal health services to treat disease, rather than to public health services that focused more on the prevention of disease and improvement of health within the population.

Beginning in the 1970s and continuing into the 1990s, various efforts were made to emphasize public health's role beyond infectious diseases to also look at areas such as chronic disease prevention and health promotion with both individuals and populations.[13]

In 1974, Lalonde's report *A New Perspective on the Health of Canadians*[14] was released. This document suggested that enhancements made to personal lifestyles and social and physical environments could lead to more substantial health improvements for Canadians than could be gained by solely increasing the availability of existing health care services.[15] Following the release of this document, many successful health promotion programs were implemented in Canada and internationally that focused on decreasing the risks associated with personal behaviours and lifestyles related to issues such as fitness, nutrition and smoking.[15]

In 1986, the first International Conference on Health Promotion was held in Ottawa, Canada, and the *Ottawa Charter for Health Promotion*[16] was created. This document defined health promotion, emphasized the importance of health determinants and suggested strategies to use when completing health promotion work. More details from this document can be found on page 32 of this module. Also released at this conference in 1986 was the Epp report, *Achieving Health for All: A Framework for Health Promotion*.[17] Epp noted that to achieve health for all Canadians, it was necessary to provide a combination of health promotion, disease prevention and health care services.

To better inform decision making related to health, the Canadian Institute of Health Information[18] (often referred to as CIHI), was established in 1991 as an independent, non-profit organization to collect and analyze data on the availability and quality of health care in Canada.[13] CIHI has been instrumental in developing consistent health indicators for use across Canada. Health indicators are standardized measures that help local health systems understand the overall health of communities and the health services available to them.[18]

Throughout the 20th century, population health strategies continued to be explored in Canada. In the 1994 document *Strategies for Population Health: Investing in the Health of Canadians,*[19] the Federal/Provincial/Territorial Advisory Committee on Population Health outlined a population health framework and strategic directions. Subsequently, the *Report on the Health of Canadians* was released in 1996, presenting the results from the first collaborative effort between federal, provincial and territorial governments to measure the health of Canada's population.[20]

In 1997, the two volume report *Canada Health Action: Building on the Legacy*[21] was released as a result of the work of the National Forum on Health. This Forum was established from 1994 to 1997 to find innovative ways to improve the health of Canadians and the Canadian health system.[21] The recommendations were organized under the headings of values, striking a balance, determinants of health and evidence-based decision making.

Upon entering the 21st century, despite public health's important role in disease prevention and health protection, public health's importance continued to often not be recognized and services remained inadequately resourced. The Federal/Provincial/Territorial Advisory Committee on Population Health presented a *Review of Public Health Capacity in Canada*[22] to the Deputy Ministers of Health in June of 2001, outlining concerns for public health's reduced capacity to function optimally throughout the country. This report was never formally disseminated.[1] Shortly after the presentation of this document, the terrorist attacks on September 11th, 2001 in the United States and the 2003 SARS outbreak in Canada occurred. These events created further discussion and calls for reform within the Canadian public health system.

The events of September 11th, 2001 underscored the necessity for all levels of government within Canada to have integrated emergency preparedness and response plans. *An Emergency Management Framework for Canada*[23] is now available through Public Safety and Emergency Preparedness Canada and calls for partnerships and collaboration between all sectors of Canadian society.

After Canada's public health experience with the SARS outbreak in 2003, many people questioned whether Canada's public health system was adequately resourced to deal with a

national outbreak of a new communicable disease. Many experts demanded a renewal of the public health system in Canada. Often referred to as the Naylor report, the document *Learning from SARS: Renewal of Public Health in Canada*[1], was created by the National Advisory Committee on SARS and Public Health. It highlighted that public health would not be able to succeed without a highly skilled and adequately resourced public health workforce available at every local health agency throughout Canada.[13] In 2006, the Ontario Ministry of Health and Long-Term Care released *The SARS Commission: Spring of Fear Final Report*[24] that also contained many key learning and recommendations related to public health renewal, public health legislation and operational management of an outbreak. Table 4 provides links to more extensive information regarding the history and renewal of public health in Canada.

Table 4: The History of Public Health: Additional Resources

Celebrating our Past[11] This document outlines a speech given by Dr. John E.F. Hastings to the Annual Meeting of the Ontario Public Health Association. It provides a comprehensive overview of the history of public health in Canada, and it is available at: http://www.opha.on.ca/resources/celebrating-the-past.pdf
Background to the Public Health Human Resources Strategy[13] This website provides a brief overview of the historic events and decisions made within Canada that have affected public health practice and public health human resources planning. This site can be accessed at: http://www.phac-aspc.gc.ca/php-psp/phrs_e.html
Evolution of the Determinants of Health, Health Policy and Health Information Systems in Canada[25] This journal article reviews the evolution of the determinants of health in Canada, and explores how this evolution was affected by health policy decisions and health information systems. It is available at: http://www.ajph.org/cgi/reprint/93/3/388.pdf

Public Health Renewal in Canada

Over the last few decades, many experts in multiple reports have made consistent recommendations for the renewal of the public health system in Canada.[1, 24, 26-28] The Government of Canada has responded to many of these recommendations and work is presently being done to improve and revitalize Canada's public health system. The overall national strategy to strengthen public health in Canada has resulted in the following few examples:

1. The Creation of the Public Health Agency of Canada[29]

Created in 2004, the Public Health Agency provides national leadership on issues related to chronic disease and future infectious disease epidemics. It encourages collaboration across all jurisdictions in the country. On December 12, 2006 the Public Health Agency of Canada Act[30] officially came into force. This Act provides a statutory basis for the Agency and confirms the duties of the Chief Public Health Officer for Canada.[31]

2. Health Goals for Canada[29]

In 2004, the Prime Minister and First Ministers made a commitment to establish health goals for Canada to guide the improvement of health for Canadians. It was agreed that these goals would be developed based on extensive consultation with both experts and the Canadian public.[32] Consultations were held, and the health goals were agreed upon in 2005. Please see Table 5 for a link to the health goals.

3. The Formation of the National Collaborating Centres[29]

In 2004, the Prime Minister and First Ministers made a commitment to establish six National Collaborating Centres for Public Health, as part of a plan to strengthen the Canadian public health system. A link to more information about these Centres is provided in Table 5.

Table 5 provides links to additional information regarding public health renewal in Canada from a national perspective.

Table 5: Public Health Renewal in Canada: Additional Resources
Learning from SARS: Renewal of Public Health in Canada[1] This document provides the National Advisory Committee on SARS and Public Health's recommendations for the renewal of public health in Canada. This document is available at: http://www.phac-aspc.gc.ca/publicat/sars-sras/pdf/sars-e.pdf
Improving Public Health System Infrastructure in Canada[26] In this report, the Strengthening Public Health System Infrastructure Task Group, which was a task group of the Federal/Provincial/Territorial Advisory Committee on Population Health and Health Security, offers recommendations for public health system renewal. This document is available at: http://www.phac-aspc.gc.ca/php-psp/pdf/improving_public_health_infrastructure_in_canada_e.pdf
Health Goals for Canada[29] Information about the development of the health goals is available at: http://www.phac-aspc.gc.ca/hgc-osc/home.html, and a copy of the health goals is available at: http://www.phac-aspc.gc.ca/hgc-osc/pdf/goals-e.pdf
The Formation of the National Collaborating Centres[29] The National Collaborating Centres work to foster linkages and each act as a national focal point in a specialized area of public health. More information about the Collaborating Centres is available at: http://www.phac-aspc.gc.ca/media/nr-rp/2004/2004_01bk2_e.html

Public health however, is predominantly a responsibility of provinces and territories. In recent years, many of these jurisdictions have also been taking stock of their current public health systems and taking action to improve them.

How is the Public Health System Different, But Complementary to the Personal Health Services System?

Most people have had multiple and repeated experiences interacting with the personal health services system. Whether it is seeing a family physician or specialist, going to an emergency department, or just watching TV, there is a level of understanding of this system among the public. In contrast, much of what public health does is hidden behind the scenes. A prevented disease or injury is invisible. A prevented outbreak does not occur. As a system, public health "tends to operate in the background unless there is an unexpected outbreak of disease such as SARS or failure of health protection as occurred with water contamination in Walkerton, Ontario (2000) or North Battleford, Saskatchewan (2001)" (p.2).[1] While the obesity epidemic is noted, there is little common understanding of the assessment, analysis and comprehensive action occurring behind the scenes. Despite this difference in visibility, much of the improvement in health over the past 100 years has been due to public health interventions.

Much of the information in the section below was taken directly from the resource: *The Renewal of Public Health in Nova Scotia: Building a Public Health System to Meet the Needs of Nova Scotians*.[33]

A key differentiating feature between the two systems is their focus. While personal health services are focused on the individual, public health is focused on population needs. Public health organizations will deliver programs and services to individuals, but these are often done with the broader intent of improving the population's health. For example, individual cases of communicable diseases are investigated and interventions made, but these are a component of the overall strategy of preventing further illness in others. While immunizations are given to individuals, the public health goal is to accomplish sufficient coverage at the population level in order to achieve "herd immunity" (please see footnote 1). Preventing an outbreak of measles is dependent on the level of protection throughout the population.

[1] The resistance of a group to invasion and spread of an infectious agent, based on the resistance to infection of a high proportion of individual members of the group. From: Last JM, editor. A dictionary of epidemiology. Oxford University Press: Toronto, 2001.

This difference in focus has implications on how the systems are structured and operate. In clinical care, if a primary care physician requires assistance with a problem that exceeds their experience or expertise, s/he will consult a specialist that is typically based at the local secondary level hospital. If the specialist at that facility is in similar need of assistance, s/he will consult with the tertiary level teaching hospital. If a phone consultation cannot deal with the situation, then the patient can be physically sent to the appropriate setting.

Public health is similar in that practitioners at the front lines of the system need to request advice and assistance from the next level of the system. The critical difference is that the next level is within government at the provincial and then federal levels. This means that the public health role and types of expertise required at the provincial and federal levels are going to be extremely different from those required for other types of services. One does not expect a senior provincial bureaucrat to be able to provide advice on the clinical management of a severely ill patient; however, one does expect that the public health expertise will be available at the provincial level to assist with the unusual/large outbreak or provide evidence-based advice regarding how best to pursue a change in tobacco policies in a community.

The additional distinction is that while a patient requiring a higher level of care can be transferred out of a health authority to another part of the province to acquire that care, one cannot move communities with their associated outbreaks, obesity epidemics, or environmental contaminants. The public health system needs to be designed in such a way that the supports are available and come to the health authority in need of them.

The development of inter-disciplinary teams is an increasing aspect of care in the personal health services system. Such teams have always been a fundamental part of the work in public health, although the range of disciplines working in the public health system is different. There is an additional level of complexity in public health because of the importance of the provincial system level to be actively involved in supporting the staff of the local authority. In some instances, the provincial level is the more appropriate system level to deliver certain aspects of selected programs (e.g. large social marketing campaigns, surveillance, etc.). Therefore it is more appropriate to think of a single set of public health programs and to acknowledge the relative

roles and contributions of the different system levels in their delivery. Essentially, the local staff working for the health authority and the provincial level public health staff need to be thought of as team members working together to improve and protect the health of the public.

Public Health and Primary Health Care

The renewed emphasis on "primary health care" in recent years has prompted discussion about its boundaries with public health. It is an excellent example of how there is a complementary relationship between public health and personal health services. Table 6 offers insight into the complementary roles that exist within the public health and primary health care systems. While there can be overlap for specific activities that might be performed by either of the systems (e.g. immunizations), the reality is that many of the needed activities can be clearly categorized to one group or another. What is particularly important is that the activities of neither system exist in isolation and are in fact inter-dependent.

Table 6: Complementary Roles of Public Health and Primary Health Care

Topic	Public Health	Primary Health Care
Immunizations	• Set policy (vaccines, schedule) • Delivery agent • Track population coverage rates • Monitor/investigate adverse events • Develop and routinely analyze immunization registry system • Identify and disseminate effective strategies to address gaps in coverage • Investigate cases/outbreaks of vaccine preventable diseases	• Delivery agent • Report adverse events • Participate in implementation of strategies to address gaps in coverage • Monitor coverage rates in local setting (e.g. CHC) • Report immunizations provided (populate registry) • Report vaccine preventable diseases
Communicable Diseases	• Set policy (which diseases, when/how to report, treatments) • Investigate cases, clusters – ensure contact follow-up • Provide information to providers regarding	• Identify, diagnose, treat • Report cases to public health • Contact follow-up in certain circumstances • Counselling

	trends, management of cases, emerging issues • Develop public health laboratory network • Monitor trends to identify outbreaks • Develop strategies to reduce disease (partnerships, collaboration) • Deliver/arrange for services to address gaps in primary health care (e.g. youth sexual health clinics, needle exchange) • Applied research • Counselling • Social marketing, policy	• Participate in community needs assessment/gap analysis/solutions
Chronic Disease Prevention	• Population health assessment • Surveillance • Develop comprehensive strategy • Develop inter-sectoral partnerships at all system levels • Social marketing, policy development, regulations • Support effective clinical preventive interventions • Education and skill building	• Screening, case finding • Investigate/treat risk factors, disease • Periodic health examination • Provide clinical preventive interventions • Participate in local partnerships • Education and skill building
• Taken from: *The Renewal of Public Health in Nova Scotia: Building a Public Health System to Meet the Needs of Nova Scotians*[33]		

The following is an example that demonstrates how the public health and personal health services system offer different services while still collaborating to improve the health of individuals and communities.

An Example of Collaboration between Public Health and Acute Care

Mrs. Smith is a 75 year old woman who has osteoporosis, who is very active in her community. Mr. Mancini is a 68 year old man who has rheumatoid arthritis. He lives alone and finds it difficult to leave his house unless he has someone available to help him get up and down the stairs at the front entrance. Mrs. Smith and Mr. Mancini are neighbours and they live in the same rural community in Atlantic Canada.

In Mr. Mancini's and Mrs. Smith's province, an assessment of seniors' health needs indicated that falls are a significant cause of preventable morbidity and mortality. A review of the scientific literature indicated that the best practices for falls prevention included: improving the strength and balance of seniors; reviewing and reducing their number of medications; addressing physical hazards in their home environment; and checking for vision deficits. Equipped with this health status and intervention information, public health practitioners developed an inter-sectoral provincial committee to address falls prevention for seniors. The goal of the committee is to develop a framework for action, aimed at implementing community-based programs to reduce the number of falls experienced by seniors. Members on the committee represent the following:

- A seniors' fitness program;
- A meals on wheels program;
- Places of spirituality and worship;
- A seniors' wellness organization;
- Public health in the province;
- The Public Health Agency of Canada; and
- Health professionals from the disciplines of occupational therapy, physiotherapy, nursing, medicine, and pharmacy.

To raise community awareness, the committee has created and implemented an annual Falls Prevention Day where information is shared through community organizations and the media offering suggestions of ways to prevent falls. On Falls Prevention Day this year, Mrs. Smith heard about the falls prevention suggestions at a lunch and learn session in her church. She took home a checklist of changes that she could make around her house to help eliminate the risks of falls. This included tightening up her stairs' handrails and removing two loose throw mats in her

kitchen. She also decided to increase her indoor walking program from one to three days a week, to help her stay in shape. When a local politician came to visit, she also planned to ask that sidewalks be considered for the main street in the adjacent town where she did her shopping.

Mrs. Smith realized Mr. Mancini may not have had a chance to get out to an education session, so she decided to visit him to share some of the ideas she had heard. When she arrived at his house, Mr. Mancini was not there. Mrs. Smith later learned that Mr. Mancini had fallen on his front steps and broken his hip. He was now in hospital and had received a total hip replacement. She visited him there and was pleased to find that he had been given many exercises and precautions about how to move his legs at home for the next few weeks to protect his new hip and tips on how to prevent falling in the future. A therapist was also scheduled to visit his home at the time of his discharge from hospital.

Mrs. Smith was concerned about the many other seniors who needed to learn more about fall prevention and would likely need some help in assessing risks in their homes and making changes. She contacted her local health authority and was directed to the public health injury prevention staff. Building on the increased awareness from the Falls Prevention Day, they had already been building a local network of individuals and organizations interested in falls prevention and she was welcomed as a community member to the network. The network's planning had recognized that there was going to need to be a combination of interventions that would occur in health care settings such as physician's offices, emergency departments, and pharmacies, as well as people's homes and the broader community. Initial interventions being considered including identifying community opportunities for increasing strength and balance, identifying and advocating for a reduction of existing physical hazards, assessing for polypharmacy by pharmacists and physicians, and how best to provide assistance with assessments of home environments. These set of actions represent a

Table 7: Health Promotion Strategies

- Build healthy public policy
- Create supportive environments
- Strengthen community action
- Develop personal skills
- Reorient health services to prevention

comprehensive public health approach to a health issue and illustrate the strategies for health promotion[16] (please see Table 7). The community partnership is critical because not all of the specific activities can be done by any particular service provider group or organization. Table 8 provides examples of contributions made by public health, personal health services and other partners.

Table 8: Examples of Contributions

Public Health Contributions	Personal Health Services Contributions	Other Partners' Contributions
• Conduct health status assessment (morbidity, mortality) • Complete appraisal of scientific literature • Establish inter-sectoral committee/partnership • Develop intervention framework • Monitor progress • Work with physician and pharmacy communities to integrate screening and interventions into practice • Media awareness • Develop and implement home assessment program	• Participate in community assessment and problem solving • Provide clinical expertise and experience • Work collaboratively to identify opportunities to assess for risk factors and provide interventions (e.g. pharmacists screening for particular combinations, dosages, and/or numbers of medications) • Treat falls-related injuries – rehabilitate, prevent further injuries • Link patients/clients to other services (home assessment, physical activity, etc.)	• Participate in community assessment and problem solving • Provide range of services (e.g. physical activity classes) • Identify and address community risks (e.g. sidewalks, ice in winter)

What are Public Health Approaches?

Many different approaches must be used to deliver the diverse services that the public health system offers its communities. These different approaches are often collectively referred to as the population health approach. Much of the information in the section below was taken directly from the resource: *Healthy People, Healthy Communities: Using the Population Health Approach in Nova Scotia*.[34]

Population Health Approach

Over the past several years, there has been much discussion about "population health" and the "determinants of health." Addressing the range of factors that determine health status is called a "population health approach." A population health approach aims to decrease disparities and maintain and improve the health status of the entire population. The strategies we use to increase the health of the population also bring wider social, economic and environmental benefits to the population as well. A population health approach involves citizens from different backgrounds in identifying and building upon the things that make and keep their communities healthy.

There are many factors that influence our health. When it comes to our health, research shows us that having an adequate income, a good education, and a safe environment is just as important as how much exercise we get or what food we eat. Our health is strongly linked with our opportunities to work, learn, play and contribute to our community. Health is also linked to where we live, how we care for each other, our sense of belonging in our community and how much love, attention and stimulation we receive as children.

Income and social status are more important than any other single factor that affects our health. Research shows that people with higher income and social status have greater control over their lives, especially stressful situations, and this is directly related to their health. When you look at the population as a whole, as income increases, so too does health. But this does not mean that the wealthiest countries always have the best life expectancy rates. It is those with the fairest sharing of income and power throughout the population that have the best life expectancy.

Education and employment are both related to income and helping people gain control over their lives. Education enables people to seek and act upon health information, seek needed health services, and advocate for resources that support the health of their children and family members.

The physical environment is a key influence on our health, such as soil, air and water quality or safe housing or workplaces. Our health is also influenced by personal health practices such as smoking, the physical characteristics that we inherited from our parents, our gender, the culture we grow up in, and health services (especially those designed to promote or maintain health).

Health is greatly influenced by sharing and caring in our communities. Social capital research has shown that the more that people are involved socially with their family, friends and community, the more likely they are to be healthy. Meaningful social relationships help people cope with stress, solve problems, and give people a greater sense of control over their lives. Some researchers believe that social relationships are more important in maintaining health even than are good health practices.

There are still other factors that influence the health of our population. Research has shown that people who are unemployed are more likely to be unhealthy. Our early childhood experiences are also strongly related to our health. Making sure that children have opportunities to develop self-esteem, parent/child attachment, healthy life practices, coping and social skills early in life have been shown to positively affect their health later in life.

The health of our population is influenced by many different factors. These factors that affect our health are often called "determinants of health. To improve the health of our population, we need an approach that addresses all of the factors that influence our health. It is not enough to address any single factor alone, because of the way that all of the factors interact.

The Determinants of Health

Please find below some additional information on select determinants of health. Definitions of the determinants of health continue to evolve, such that this is not an exhaustive list. The following information was taken directly from the Public Health Agency of Canada's web page titled ***Determinants of Health***.[35]

Income and Social Status

Health status improves at each step up the income and social hierarchy. High income promotes living conditions such as safe housing and the ability to buy sufficient good food. The healthiest populations are those in societies which are prosperous and have an equitable distribution of wealth.

Social Support Networks

Support from families, friends and communities is associated with better health. Effective responses to stress and the support of family and friends seem to act as a buffer against health problems.

Education

Health status improves with each level of education. Education increases opportunities for income and job security, and gives people a sense of control over life circumstances - key factors that influence health.

Employment and Working Conditions

Unemployment is associated with poorer health. People who have more control over their work circumstances and fewer stressful job demands are healthier and often live longer than those involved in more stressful or riskier work and activities.

Social Environments

Social stability and strong communities can help reduce health risks. Studies have shown a link between low availability of emotional support, low social participation, and mortality (whatever the cause).

Geography

Whether people live in remote, rural communities or urban centres can have an impact on their health.

Physical Environments

Physical factors in the natural environment (e.g. air and water quality) are key influences on health. Factors in the human-built environment such as housing, workplace safety, community and road design are also important influences.

Healthy Child Development

The effect of prenatal and early childhood experiences on subsequent health, well-being, coping skills and competence is very powerful. Children born in low-income families are more likely than those born to high-income families to have low birth weights, to eat less nutritious food, and to have more difficulty in school.

Health Services

Health services, particularly those designed to maintain and promote health, to prevent disease, and to restore health and function, contribute to the population's health.

Gender

Women are more vulnerable to sexual or physical violence, low income, single parenthood, and health risks such as accidents, sexually transmitted diseases, suicide, smoking and physical inactivity. Measures to address gender inequality within and beyond the health system improve population health.

Culture

Belonging to a particular race or ethnic or cultural group influences population health. The health of members of certain cultural groups (e.g. First Nations, visible minorities, and recent immigrants) can be more vulnerable because of their cultural differences and the risks to which they are jointly exposed.

Two other commonly discussed determinants of health are listed below. This information was taken directly from the Public Health Agency of Canada's web page titled ***What Determines Health?***[36]

Personal Health Practices and Coping Skills

These refer to actions by which individuals can prevent diseases and promote self-care, cope with challenges, and develop self-reliance, solve problems and make choices that enhance health.

Biology and Genetic Endowment

The basic biology and organic make-up of the human body are a fundamental determinant of health. Genetic endowment provides an inherited predisposition to a wide range of individual responses that affect health status. Although socio-economic and environmental factors are important determinants of overall health, in some circumstances genetic endowment appears to predispose certain individuals to particular diseases or health problems.

An Example of the Population Health Approach in Action

Table 9 provides an example of why improving the health of the population depends on our ability to address more than one of the determinants of health.

Table 9: Thinking About Food

The Issue

Imagine that we want to encourage all Atlantic Canadians to develop a good personal health practice, such as healthy eating. We know that a healthy diet is important to our health, so we decide to provide information to Atlantic Canadians about healthy eating. To do this, we develop a brochure about healthy eating and distribute it through all large grocery store chains in the four Atlantic provinces.

The Problem

The problem with this approach is that it hasn't considered other determinants of health. Think about this: People with lower incomes often cannot afford to buy the foods needed for a healthy diet (such as fresh vegetables). Some people with less education and limited literacy skills can't read labels on food packages, so they are not sure which foods are better for them. These people may have trouble reading a brochure too. Some families do not have access to transportation, so they are unable to shop at large grocery store chains (which means the brochure would not reach them unless it was distributed at all small convenience type stores). Older people living alone may not want to buy food for themselves and may not like eating alone. Some families are from cultures that traditionally eat foods that are high in fat. They may not know how to make their traditional foods in a way that is healthy. These are just a few examples of why focusing only on one of the determinants of health is not enough.

Potential Solutions

In the brochure approach we started with above, we only focused on one determinant of health – personal health practices. But if we consider other determinants of health too, such as income and education, we would most likely come up with another approach. Maybe we would develop a community garden where people work together to grow low cost fresh fruit and vegetables. Or we might develop a partnership with our community literacy organization, and offer food label reading education to people who are enrolled in literacy classes. Or we might work with a group of people on fixed low incomes to enable them to influence policy-makers to increase income assistance to support healthy eating. The opportunities are endless!

Taken from: ***Healthy People, Healthy Communities: Using the Population Health Approach in Nova Scotia***.[34]

Key Elements of a Population Health Approach

Health Canada has identified the key elements of a population health approach. The key elements are described below. Much of the information in this section was taken directly from the resource: *Healthy People, Healthy Communities: Using the Population Health Approach in Nova Scotia*.[34]

Focus on the Health of Populations

A population health approach shifts the focus away from changing individuals, to promoting healthier communities. Efforts are aimed at promoting health for the entire population, or large sub-populations, such as youth.

Address the Determinants and Their Interactions

A population health approach considers the full range of factors that influence health. Strategies to improve health carefully consider the determinants of health, such as income and social status, education, personal health practices, social support networks, and supportive physical and social environments.

Base Decisions on Evidence

A population health approach uses information from a variety of sources to assess the health of the population, identify priorities for action, and develop strategies that improve health. The information used can come from baseline data collected through surveillance activities, from research studies, and from the community's knowledge about their existing strengths, resources and needs.

Increase Upstream Investments

A population health approach considers the root causes of illness and the conditions that create health. A population health approach invests resources in actions that address factors that are known to have the greatest impact on health status, such as social, economic and environmental factors. The idea is that the further "upstream" the action is, the greater the potential gains for population health.

Apply Multiple Strategies

A population health approach uses many different strategies to improve the health of the population. Strategies are implemented in different settings too (e.g. schools, workplaces, communities).

Collaborate Across Sectors and Levels

A population health approach recognizes that taking action on the determinants of health requires the health sector to work closely with other sectors. For example, to take action on ensuring Canadians have an adequate income, organizations in the health sector need to work with organizations in the economic, education and social services sectors.

Employ Mechanisms for Public Involvement

A population health approach provides citizens with meaningful opportunities to participate in developing and implementing priorities for action to improve health.

Increase Accountability for Health Outcomes

A population health approach uses process, impact and outcome evaluation to focus on health outcomes, learning what changes in health are directly related to an intervention or program.[37] This information is readily shared with Canadians as it is available.

Considerations When Working with a Population Health Approach

The following list offers some additional considerations when using a population health approach in public health.

- Some groups are more affected by certain health issues than others. It is the public's responsibility to address the needs and concerns of all its members, and to determine the physical and social value changes required to improve the health of all.[38]

- Collaborative action and citizen engagement are crucial if communities truly want to address chronic disease and lifestyle.[10]

- The success of a population health approach depends on decision making that is "...reasonable, open and transparent, inclusive, responsive and accountable" (p.403).[10]

- To achieve optimal health, communities must promote social justice and equity so that individuals are provided with opportunities to meet their physical, emotional, mental, social, and spiritual needs.[38]

- To effectively address all the determinants that influence health requires the collaboration of many individuals, sectors and communities. As decisions are made to improve the health of the population, it is important that the impacts on all stakeholders are considered. Approaches to improving health must be flexible and adaptable to meet the needs of the many stakeholders affected.[39]

- It should never be assumed that there is a literal, direct link between a health determinant and health status. For example, just because an individual is poor does not automatically mean the individual is ill. People differ in the way they experience their physical, social and emotional environments and it is important that we do not assume we know the health status of individuals based on health determinant information alone.[39] The determinants should be used more as an indicator of pre-disposing factors to health, and not used as definitive health predictors.[39]

Although much has been done in Canada to define a population health approach and to develop models for its implementation, much more work needs to be completed. It has been argued by some that the public health sector has most commonly only used a population health approach as an epidemiology tool looking at the health status of communities and populations.[40, 41] Some authors caution that more work needs to be done for the population health approach to truly begin to identify and address the social inequities which are at the root of many populations' health concerns.[40-42]

For links to more information on the population health approach, please refer to Table 10.

Table 10: Population Health Approach: Additional Resources

The Population Health Template: Key Elements and Actions that Define a Population Health Approach[43]

This document reviews the population health approach in detail and provides examples of actions that might be taken to accomplish key elements within the approach. The document is available at: http://www.phac-aspc.gc.ca/ph-sp/phdd/pdf/discussion_paper.pdf

The Population Health Template Working Tool[44]

This document complements the above described discussion paper, and provides a condensed overview of the key elements that define a population health approach. This document is available at: http://www.phac-aspc.gc.ca/ph-sp/phdd/pdf/template_tool.pdf

Determinants of Health[35]

The Public Health Agency of Canada has a web page that provides information about the determinants of health, with a link to information about the associated National Collaborating Centre. This page can be accessed at: http://www.phac-aspc.gc.ca/media/nr-rp/2006/2006_06bk2_e.html

What are the Functions of Public Health in Canada?

Using a population health approach, public health in Canada works to maintain and improve the health status of populations, to reduce the existence of health disparities and reduce costs associated with the personal health system.[1] To complete this work, the public health system in Canada fulfills five core functions. These are:

- Population Health Assessment;
- Health Surveillance;
- Health Promotion;
- Disease and Injury Prevention; and
- Health Protection.

Population Health Assessment

The public health system works to more fully understand what influences health and the impact of chronic diseases and chronic disease risk factors on the health of populations. Factors which contribute to good health and/or health risks are considered.[1] This work may involve investigating observed disease clusters, or the health effects of known hazard exposure.[45] The results of population health assessment are used to prioritize and improve services and policies affecting the public.[1] Refer to Table 11 for examples of population health assessment. For links to more information regarding population health assessment, please refer to Table 12.

Table 11: Examples of Population Health Assessment

Examples of programming for the public health function of population health assessment include: • Population/community health needs assessment; and • Health status reports, system report cards.
Taken from: *Learning from SARS: Renewal of Public Health in Canada*[1]

Table 12: Population Health Assessment: Additional Resources
Population Health Surveys[46] This Statistics Canada web page contains links to various completed population health surveys, including the Canadian Community Health Survey, the National Population Health Survey, the Canadian Health Measures Survey, the Joint Canada/United States Survey of Health and the Health Services Access Survey. It can be accessed at: http://www.statcan.ca/english/concepts/hs/index.htm
Canadian Population Health Initiative[47] This web page of the Canadian Institute of Health Information provides information about the Canadian Population Health Initiative, and provides links to various reports that examine the health of Canadians. This can be accessed at: http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=cphi_e

Table 13: Examples of Health Surveillance
Examples of programming for the public health function of health surveillance include: • Periodic health surveys; • Cancer and other disease registries; • Communicable disease reporting; • Ongoing analysis of data to identify trends or emerging problems, (e.g. recognition of increasing syphilis cases); and • Report to practitioners of increasing threat, what they need to look for, and intervention required.
Taken from: *Learning from SARS: Renewal of Public Health in Canada*[1]

Health Surveillance

Using multiple sources and data systems at local, provincial, and national levels, the public health system regularly gathers, analyzes and interprets information about the health of the population. This information is used to make decisions, and to identify, monitor and communicate health issues within communities.[45] Health surveillance and epidemiology facilitate early identification of outbreaks and trends with illnesses and diseases, with a goal of providing earlier intervention to reduce the negative impact on communities.

Health surveillance is also used to monitor the impact of attempts to reduce disease risk factors and disease, and of efforts to improve health.[1] As an example, public health surveillance would detect that a new strain of E. coli was being reported in various parts of Canada within a short

time period, which would prompt an investigation of the possibility of a contaminated food source being distributed nationwide. Please refer to Table 13 for examples of health surveillance. Please refer to Table 14 for links to additional information regarding health surveillance.

Table 14: Health Surveillance: Additional Resources

Surveillance Resources[48]

The Public Health Agency of Canada has a web page that provides links to surveillance databases, networks and systems, geographic information systems for public health practice and an online disease surveillance service. These links can be accessed at: http://www.phac-aspc.gc.ca/surveillance_e.html

General Resources related to Epidemiology and Health Surveillance[49]

Within the Public Health Agency of Canada's skills enhancement web pages, a list of resources related to epidemiology and health surveillance are provided. This list is available at: http://www.phac-aspc.gc.ca/sehs-acss/recources_e.html

Health Promotion

The public health system works with partners to improve the health of individuals and communities through healthy public policy, community-based interventions and public engagement.[1, 45] In 1986, the first International Conference on Health Promotion was held in Ottawa, Canada, where the Ottawa Charter for Health Promotion was created. This charter defines health promotion as:

> "…the process of enabling people to increase control over, and to improve, their health. To reach a state of complete physical, mental and social well-being, an individual or group must be able to identify and realize aspirations, to satisfy needs, and to change or cope with the environment. Health is therefore, seen as a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical

> capabilities. Therefore, health promotion is not just the responsibility of the health sector, but goes beyond healthy lifestyles to well-being" (p.1)[16].

To complete health promotion work, the public health system uses multiple strategies, some of which are briefly described below.

Building Healthy Policy

Health promotion is different from health care, in that it works to ensure the issue of health is considered by policy makers within all sectors. It asks policy makers to think about the consequences of their sector's actions on the health of communities. Using health promotion as a common strategy, sectors are expected to collaborate, coordinating efforts to ensure the delivery of safer goods and services and cleaner environments.[16]

Creating Supportive Environments

People's health is interconnected to their environments. It is crucial that we protect our natural environmental resources and our developed communities. Health promotion asks that throughout the world we work to support and respect each other's environments. Within our own communities, health promotion states to support our health, we must create and maintain healthy home, work and leisure environments.[16]

Strengthening Community Action

Health promotion recognizes that communities benefit from directing their own future and owning their actions to achieve improved health. When empowered to take action, communities set priorities, make decisions, plan and implement strategies to meet identified health needs. Health promotion supports a community development approach, where communities use their own material and human resources to define needs and seek solutions to health issues.[16]

Community capacity building is an important concept to understand and implement when strengthening community action. Capacity building in public health is a term that is often used but poorly understood. People sometimes wonder what is meant by capacity and with whom

capacity should be built.[50] Capacity building is an approach public health providers may use in collaboration with individuals, organizations and/or communities, to ensure that all individuals and sectors within the community (including public health) have the necessary skills, knowledge and resources required to address health issues[51-54] Bopp et al. explain community capacity as:

> "…the individual and collective capacities that a community needs in order to be able to effectively address the primary determinants of health affecting the people in that place" (p.7).[55]

Developing Personal Skills

By providing information and education about health and life skills, health promotion supports the personal and social development of individuals. With appropriate knowledge and skills, people can take more control of their health and environments through all of life's stages.[16]

Re-Orienting Health Services

Health promotion expects individuals, communities, health services, industries, and governments to work together across sectors to create a health system that has an ultimate goal of pursuing health rather than mainly treating illness. When offering health services, health promotion suggests that health providers broaden their focus to more fully understand the impact of social, political, economic and physical environments on the health of individuals and communities.[16]

Table 15 provides examples of health promotion and Table 16 suggests links to further information regarding health promotion.

Table 15: Examples of Health Promotion

Examples of programming for the public health function of health promotion include:

- Intersectoral community partnerships to solve health problems;
- Advocacy for healthy public policies; and
- Catalyzing the creation of physical and social environments to support health (e.g. bike paths, promoting access to social networks for seniors who are institutionalized).

Taken from: *Learning from SARS: Renewal of Public Health in Canada*[1]

Table 16: Health Promotion: Additional Resources
Health Promotion Links[56] The Canadian Health Network provides links to health promotion related topics, including what determines health and health promotion strategies and tools. These links are accessible at: http://www.canadian-health-network.ca/servlet/ContentServer?cid=1044313071295&pagename=CHN-RCS%2FPage%2FGTPageTemplate&c=Page&lang=En
Health Promotion Related Links[57] The Public Health Agency of Canada provides links to health promotion related topics, including child health, healthy pregnancy and infancy, healthy living, mental health, family violence, physical activity, rural health, and seniors' health. The links are accessible at: http://www.phac-aspc.gc.ca/hp-ps/index.html
Health Promotion 101 On-line Course[58] The Ontario Health Promotion Resource System has developed an on-line health promotion course. The site can be accessed at: http://www.ohprs.ca/hp101/main.htm

Disease and Injury Prevention

It is well-known that many chronic diseases and injuries could be prevented if societies and individuals applied the knowledge that readily exists about disease and injury prevention. This public health function contains actions such as promoting breastfeeding, healthy eating, smoking cessation, physical activity, falls prevention, and child safety. This public health function also includes the distribution of immunizations, and the containment and management of outbreaks and epidemics.[1] Table 17 contains examples of disease and injury prevention.

Table 17: Examples of Disease and Injury Prevention
Examples of programming for the public health function of disease and injury prevention include: • Immunizations; • Investigation and outbreak control; • Encouraging healthy behaviours (e.g. not smoking, healthy eating, physical activity, bicycle helmet use); and • Early detection of cancers (e.g. organized programs for breast cancer screening).
Taken from: *Learning from SARS: Renewal of Public Health in Canada*[1]

Please refer to Table 18 to see suggested further reading regarding disease and injury prevention.

Table 18: Disease and Injury Prevention: Additional Resources
Chronic Disease Related Links[59] The Public Health Agency of Canada provides chronic disease related links, including topics such as arthritis, best practices, cancer, cardiovascular disease, chronic respiratory disease, diabetes, and the economic burden of illness. These links can be found at: http://www.phac-aspc.gc.ca/cd-mc/index.html
Injury Prevention Related Links[60] The Public Health Agency of Canada provides injury prevention related links, separating injury prevention topics into those most relevant to childhood and adolescence, and those most related to seniors. These links can be found at: http://www.phac-aspc.gc.ca/inj-bles/index.html
Immunization and Vaccines[61] The Public Health Agency of Canada provides immunization and vaccine links, exploring topics such as the Canadian Immunization Guide, immunization registries and schedules, the national immunization strategy, travel vaccines and vaccine safety. These links can be found at: http://www.phac-aspc.gc.ca/im/index.html

Health Protection

Table 19: Examples of Health Protection
Examples of programming for the public health function of health protection include: • Restaurant inspections; • Child care facility inspections; • Water treatment monitoring; and • Air quality monitoring/enforcement.
Taken from: *Learning from SARS: Renewal of Public Health in Canada*[1]

This public health function works to ensure people are supplied with safe food and water, and that communities are protected from environmental threats and infectious diseases. Many regulations are in place in Canada to ensure health protection of communities.[1] Table 19 offers some examples of health protection. Further information regarding health protection is also suggested in Table 20.

Table 20: Health Protection: Additional Resources
Infectious Diseases Related Links[62] The Public Health Agency of Canada provides links related to infectious diseases, exploring topics such as Anthrax, avian influenza, blood safety, and many infectious diseases. These links can be found at: http://www.phac-aspc.gc.ca/id-mi/index.html
Emergency Preparedness Related Links[63] The Public Health Agency of Canada provides emergency preparedness links exploring topics such as bioterrorism, laboratory safety and security and emergency preparedness, planning and training. These links can be found at: http://www.phac-aspc.gc.ca/ep-mu/index.html.
Keeping Canadians Safe[64] Public Safety and Emergency Preparedness Canada provides links to emergency preparedness resources related to natural disasters, pandemic influenza and emergency management organizations. This site is available at: http://www.psepc.gc.ca/chan/cit/index-en.asp

In practice, these five public health functions are often inter-related.[33] To address many public health issues, integrated application of multiple public health functions is required. Please see Table 21 for an example of public health's attempts to reduce obesity in the population, applying multiple public health core functions.

Table 21: Public Health and the Reduction of Obesity in the Population

Population health assessment is used to outline what segments of the population experience obesity. It might also look at other determinants of health within the population that may be related to obesity, such as income and social status, geography, physical and social environments. **Health surveillance** is used to record obesity rates and associated long-term effects of obesity (e.g. diabetes, heart disease). **Disease prevention** strategies are offered to the population to encourage healthy eating. Through social marketing efforts and advocating for the reduction of costs for fresh fruits and vegetables, **health promotion** strategies are used. **Health protection** is also involved to reduce obesity, by regulating that food labels must inform consumers when transfats exist in processed foods.

This example is modeled after an example found in: *The Renewal of Public Health in Nova Scotia*[33]

What are Public Health Principles?

It appears there is not a definitive list of public health values or principles that have been agreed upon in Canada. Kenny, Melnychuk and Asada offer a list of principles that have been discussed in the literature that are likely relevant to public health in Canada.[10] It is important to note that considerable debate surrounds each of these principles, as scholars and providers discuss the ethics associated with their implementation.

The Utilitarian or Utility Principle

This principle is based on maximizing theory, whereby an obligation exists to consider decisions and policies that create the greatest good for the greatest number of people.[65]

The Precautionary Principle

This principle is used within the scientifically-based field of risk management. This principle recognizes that it is not always possible to have complete scientific evidence about certain conditions. Therefore, this principle acknowledges that decisions for action sometimes must be made without full scientific evidence when there is a threat of serious or irreversible harm.[66]

The Principle of Least Restrictive Means

This principle acknowledges that different actions can be taken to achieve public health outcomes, and these actions vary in the amount of power and control that government places over the population. This principle states that highly restrictive means should only be implemented after least restrictive means have been unsuccessful. For example, this principle expects that education and facilitation are means used to address public health outcomes before regulation or incarceration is used. This principle also emphasizes that actions used must be legal and must not discriminate between populations.[67]

The Reciprocity Principle

This principle outlines that once public health actions are implemented that place restrictions on an individual or community, the public health system is expected to help the individual and/or

community address their duties. For example, an individual may be required to sacrifice time and income to comply with public health actions, and where possible the individual should be compensated for this sacrifice.[67]

The Transparency Principle

This principle states that all decisions made regarding public health action should be clear and transparent. The decision making process should allow all appropriate stakeholders to have equal input into the final decision.[67]

The Harm Principle

This principle establishes the ability for governments to restrict the liberty of an individual or community when such action is necessary to prevent others from harm.[67]

Please refer to Table 22 for an example in public health that illustrates the application of the harm principle, least restrictive means principle, and the reciprocity and transparency principles.

Table 22: Example Illustrating the Application of Multiple Public Health Principles

Smear Positive TB: A 35 year old homeless male is found to be smear positive for MTB. The man is frequently non-compliant with medication and uses shelters on nights when it is cold.
In this case there is a potential for harm to others as someone smear positive for tuberculosis is capable of transmitting the disease. Sleeping in a crowded shelter is an opportunity for such a transmission to occur. Therefore the **harm principle** is met and action of some form is justifiable. In terms of limiting the harms, the **least restrictive means principle** would hold that public health officials start with attempts to educate and move progressively up through Directly Observed Therapy (DOTS), supportive housing, voluntary admission, to involuntary detention.[1-3] The **reciprocity principle** holds that public health officials have an obligation to not just provide the man with options but facilitate the discharge of his obligations. Interventions such as DOTS and supportive housing are founded, in part, on the recognition of the need for such social reciprocity. Finally, guiding the entire process should be a clear and **transparent** communication including the provision of legal counsel if necessary (p.102).
[1]Annas GJ. Control of tuberculosis – the law and the public's health. *New England Journal of Medicine* 1993;328(8):585-88. [2]Bayer R, Dupuis L. Tuberculosis, public health, and civil liberties. *Annual Review of Public Health* 1995;16:307-26 [3]Singleton L, Turner M, Haskal R, et al. Long-term hospitalization for tuberculosis control. Experience with a medical-psychosocial inpatient unit. *JAMA* 1997;278(10):838-42
Taken from: Principles for the Justification of Public Health Intervention[67]

Other Principles Suggested for Public Health

In addition to the principles previously described, the literature also identifies other potential principles for public health, including: Accountability, Efficiency, Effectiveness, Sustainability, Respect for Cultural Diversity, Protection of the Vulnerable, Empowerment of the Marginalized, Social Responsibility, and Interdependence.

To unify stakeholders' actions and to assist with the development of an ethical framework, some authors suggest that a consistent list of values or principles should be created for public health in Canada.[10, 41, 67] One of these authors does caution a single ethical framework based on principles alone will not likely suffice in public health, given that multiple viewpoints from different societies and cultures will often need to be applied to public health action affecting broad populations.[68] For additional reading on public health principles, please refer to Table 23.

Table 23: Public Health Principles: Additional Resources

The Promise of Public Health: Ethical Reflections This article by Kenny, Melnychuk, and Asada provides food for thought about public health principles and is available within the Canadian Journal of Public Health, 2006;97(5):402-404.
Principles for the Justification of Public Health Intervention This article by Upshur also provides food for thought about public health principles and is available within the Canadian Journal of Public Health, 2002;93(2):101-103.

Public Health Governance

In Canada, the federal, provincial and territorial governments, as well as regional or local governing bodies all share responsibility for developing and implementing public health policy. The different levels of government and governing bodies all collaborate to monitor, analyze and manage threats to public health and to promote the health of the public.[69] Public health practitioners are therefore interspersed throughout the system, working at a federal, provincial or regional/local level.

Federal Level

The federal government has authority over public health questions and issues associated with foreign governments, multi-lateral health agencies, trade, commerce and national borders.[1, 69] It also is responsible for regulating hazardous and controlled substances as well as drugs and health products. The federal government also oversees health services delivery including public health services to First Nations, inmates within the federal correctional system, the Canadian Military and the RCMP.[8] At the federal level, the Public Health Agency of Canada guides work in public health, and this agency is lead by a Chief Public Health Officer.[69] At the federal level, various pieces of legislation guide public health practice.

Provincial and Territorial Level

Each province or territory has a public health act (or equivalent) with regulations that govern public health activities.[26] Each jurisdiction may also have additional, unique legislation that affects public health practice. The responsibility for delivering most front-line public health services primarily falls within provincial/territorial jurisdiction; however, in many provinces and territories the actual planning and delivery of public health services is often devolved to a regional or local level.[26] At a provincial/territorial level, Chief Medical Officers of Health often lead public health initiatives.

Regional/Local Level

At the regional or local level, often public health program and services are governed by an elected or appointed board (e.g. district health authorities).[26] At the local level, Public Health Officers often lead public health initiatives.

Public Health in Atlantic Canada

The organization of public health within Atlantic Canada is complex; there are 24 different health authorities, and four separate provincial governments.[8] Other main stakeholders collaborating within public health are:[8]

- Federal Governments;
- Non-Profit Organizations;
- Academic Institutions; and
- Researchers.

Each jurisdiction has its own unique challenges to address, and they often have varying amounts of resources available to deliver public health services.[8]

Within Atlantic Canada, provincial public health services are often organized to provide some services to targeted populations such as children or families, while other services are offered which span across populations on topics such as health promotion, prevention of chronic disease, injury prevention, addictions or healthy living.[8]

The Public Health Agency of Canada has a regional office within the Atlantic Region. This regional office collaborates with and supports projects and initiatives aimed at understanding and implementing a population health approach, often placing particular emphasis on vulnerable communities.[8] The Atlantic region office's main areas of work fall within community capacity building, knowledge development and inter-sectoral collaboration.[8] Table 24 provides web links to information related to public health efforts within Atlantic Canada.

Table 24: Government Public Health Web Links Related to Atlantic Canada
Government of New Brunswick's Public Health Web Link http://www.gnb.ca/0051/0053/index-e.asp
Government of Newfoundland and Labrador's Public Health Web Link http://www.health.gov.nl.ca/health/divisions/medical/diseasecontrol.htm#dce
Government of Nova Scotia's Public Health Web Link http://www.gov.ns.ca/hpp/
Government of Prince Edward Island's Public Health Web Link http://www.gov.pe.ca/infopei/index.php3?number=43156&lang=E
Public Health Agency of Canada Atlantic Region (PHAC Atlantic) Web Link http://www.phac-aspc.gc.ca/canada/regions/atlantic/

Public Health Core Competencies

This information was taken from the Public Health Agency of Canada's web page titled: ***Pan-Canadian Core Competencies for Public Health***.[71]

What are Core Competencies?

Core competencies are the essential knowledge, skills and attitudes necessary for the practice of public health. They transcend the boundaries of specific disciplines and are independent of program and topic. They provide the building blocks for effective public health practice, and the use of an overall public health approach. Generic core competencies provide a baseline for what is required to fulfill public health system core functions. These include population health assessment, surveillance, disease and injury prevention, health promotion and health protection.

Why Do We Need Core Competencies?

Core competencies may improve the health of the public by:

- contributing to a more effective workforce
- encouraging service delivery that is evidence based, population-focused, ethical, equitable, standardized and client-centred
- helping to create a more unified workforce by providing a shared understanding of key concepts and practices
- helping to explain the nature of public health and public health goals.

Core competencies will benefit the people who work in public health by:

- providing guidelines for the basic knowledge, skills and attitudes required by individual practitioners in public health
- supporting the recruitment, development and retention of public health practitioners
- providing a rational basis for developing curricula, training and professional development tools
- improving consistency in job descriptions and performance assessment
- supporting the development of discipline and program-specific sets of competencies.

Core competencies can help public health organizations to:

- identify the knowledge, skills and attitudes required across an organization or program to fulfill public health functions
- supporting the recruitment, development and retention of public health practitioners
- help identify the appropriate numbers and mix of public health workers in a given setting
- identify staff development and training needs
- provide a rationale for securing funds to support workforce development
- develop job descriptions, interview questions, and frameworks for evaluation and quality assurance
- facilitate collaboration, shared goals and interdisciplinary work.

How Were The Current Core Competencies Developed?

Recent public health events have emphasized the need to strengthen and develop the public health workforce. In their report *–Building the Public Health Workforce for the 21st Century –* The Federal/Provincial/Territorial Joint Task Group on Public Health Human Resources proposed a pan-Canadian framework to strengthen public health capacity. Identifying core competencies was one of the foundational building blocks in that framework.

In 2005, the Joint Task Group on Public Health Human Resources developed a draft set of core competencies. In its report, the Joint Task Group on Public Health Human Resources recommended that the Public Health Agency of Canada undertake a national process to review and modify or validate these draft core competencies. Following preliminary consultation and discussion with public health stakeholders across the country, a second draft of core competencies was developed in 2006. This was enhanced by the development of a companion *Glossary of Terms Relevant to the Core Competencies for Public Health.* Appendix A is an edited version of this glossary, which includes additions suggested in the review process.

The second draft of the core competencies and the glossary were shared and discussed with a large number of public health practitioners and with representatives of all levels of government. The extensive consultation process included:

- regional meetings across Canada

- a pan-Canadian survey
- implementation pilots
- work with specific disciplines and professional organizations.

The set of core competencies for public health workers in Canada in this document reflects the feedback and suggestions gained in the consultation.

Who Are The Core Competencies For?

Individuals with post-secondary training in public health are expected to possess all of the core competencies at least at a basic level of proficiency. Administrative staff and some other public health workers (such as community health representatives, out-reach workers and home visitors) are not expected to have all of the core competencies listed in this document. They will have an appropriate sub-set of the competencies, depending on their role.

The core competencies primarily relate to the practice of individuals, including front line providers, consultants/specialists and managers/supervisors (see Appendix B for a description of these roles). They can also serve as a tool for assessing and creating the best mix of competencies for a public health team or organization.

Ensuring that public health practitioners acquire and maintain competence and proficiency in all of the categories discussed in this document is a shared responsibility. Individuals must be supported and assisted by employers, professional organizations, educational institutions, regulatory bodies, unions, and governments at the federal, provincial/territorial and local levels.

Core Competency Statements

The core competency statements are not designed to stand alone, but rather to form a set of knowledge, skills and attitudes practiced within the larger context of the values of public health.

Attitudes and Values

All public health professionals share a core set of attitudes and values. These attitudes and values have not been listed as specific core competencies for public health because they are difficult to teach and even harder to assess. However, they form the context within which the competencies are practiced. This makes them equally important.

Important values in public health include a commitment to equity, social justice and sustainable development, recognition of the importance of the health of the community as well as the individual, and respect for diversity, self-determination, empowerment and community participation. These values are rooted in an understanding of the broad determinants of health and the historical principles, values and strategies of public health and health promotion.

If the core competencies are considered as the notes to a musical score, the values and attitudes that practitioners bring to their work provide the tempo and emotional component of the music. One may be a technically brilliant musician but without the correct tempo, rhythm and emotion, the music will not have the desired impact.

Statements in Seven Categories

The 36 core competencies are organized under seven categories: public health sciences; assessment and analysis; policy and program planning; implementation and evaluation; partnerships, collaboration and advocacy; diversity and inclusiveness; communication; leadership.

Public Health Sciences

This category includes key knowledge and critical thinking skills related to the public health sciences: behavioural and social sciences, biostatistics, epidemiology, environmental public health, demography, workplace health, and the prevention of chronic diseases, infectious diseases, psychosocial problems and injuries. Competency in this category requires the ability to apply knowledge in practice.

A public health practitioner is able to …

1.1 Demonstrate knowledge about the following concepts: the health status of populations, inequities in health, the determinants of health and illness, strategies for health promotion, disease and injury prevention and health protection, as well as the factors that influence the delivery and use of health services.

1.2 Demonstrate knowledge about the history, structure and interaction of public health and health care services at local, provincial/territorial, national, and international levels.

1.3 Apply the public health sciences to practice.

1.4 Use evidence and research to inform health policies and programs.

1.5 Demonstrate the ability to pursue lifelong learning opportunities in the field of public health.

Assessment and Analysis

This category describes the core competencies needed to collect, assess, analyze and apply information (including data, facts, concepts and theories). These competencies are required to make evidence-based decisions, prepare budgets and reports, conduct investigations and make recommendations for policy and program development.

A public health practitioner is able to …

2.1 Recognize that a health concern or issue exists.

2.2 Identify relevant and appropriate sources of information, including community assets and resources.

2.3 Collect, store, retrieve and use accurate and appropriate information on public health issues.

2.4 Analyze information to determine appropriate implications, uses, gaps and limitations.

2.5 Determine the meaning of information, considering the current ethical, political, scientific, socio-cultural and economic contexts.

2.6 Recommend specific actions based on the analysis of information.

Policy and Program Planning, Implementation and Evaluation

This category describes the core competencies needed to effectively choose options, and to plan, implement and evaluate policies and/or programs in public health. This includes the management of incidents such as outbreaks and emergencies.

A public health practitioner is able to …

3.1 Describe selected policy and program options to address a specific public health issue.

3.2 Describe the implications of each option, especially as they apply to the determinants of health and recommend or decide on a course of action.

3.3 Develop a plan to implement a course of action taking into account relevant evidence, legislation, emergency planning procedures, regulations and policies.

3.4 Implement a policy or program and/or take appropriate action to address a specific public health issue.

3.5 Demonstrate the ability to implement effective practice guidelines.

3.6 Evaluate an action, policy or program.

3.7 Demonstrate an ability to set and follow priorities, and to maximize outcomes based on available resources.

3.8 Demonstrate the ability to fulfill functional roles in response to a public health emergency.

Partnerships, Collaboration and Advocacy

This category captures the competencies required to influence and work with others to improve the health and well-being of the public through the pursuit of a common goal. Partnership and collaboration optimizes performance through shared resources and responsibilities. Advocacy—speaking, writing or acting in favour of a particular cause, policy or group of people—often aims to reduce inequities in health status or access to health services.

A public health practitioner is able to …

4.1 Identify and collaborate with partners in addressing public health issues.

4.2 Use skills such as team building, negotiation, conflict management and group facilitation to build partnerships.

4.3 Mediate between differing interests in the pursuit of health and well-being, and facilitate the allocation of resources.

4.4 Advocate for healthy public policies and services that promote and protect the health and well-being of individuals and communities.

Diversity and Inclusiveness

This category identifies the socio-cultural competencies required to interact effectively with diverse individuals, groups and communities. It is the embodiment of attitudes and practices that result in inclusive behaviours, practices, programs and policies.

A public health practitioner is able to …

5.1 Recognize how the determinants of health (biological, social, cultural, economic and physical) influence the health and well-being of specific population groups.

5.2 Address population diversity when planning, implementing, adapting and evaluating public health programs and policies.

5.3 Apply culturally-relevant and appropriate approaches with people from diverse cultural, socioeconomic and educational backgrounds, and persons of all ages, genders, health status, sexual orientations and abilities.

Communication

Communication involves an interchange of ideas, opinions and information. This category addresses numerous dimensions of communication including internal and external exchanges; written, verbal, non-verbal and listening skills; computer literacy; providing appropriate information to different audiences; working with the media and social marketing techniques.

A public health practitioner is able to …

6.1 Communicate effectively with individuals, families, groups, communities and colleagues.

6.2 Interpret information for professional, nonprofessional and community audiences.

6.3 Mobilize individuals and communities by using appropriate media, community resources and social marketing techniques.

6.4 Use current technology to communicate effectively.

Leadership

This category focuses on leadership competencies that build capacity, improve performance and enhance the quality of the working environment. They also enable organizations and communities to create, communicate and apply shared visions, missions and values.

A public health practitioner is able to …

7.1 Describe the mission and priorities of the public health organization where one works, and apply them in practice.

7.2 Contribute to developing key values and a shared vision in planning and implementing public health programs and policies in the community.

7.3 Utilize public health ethics to manage self, others, information and resources.

7.4 Contribute to team and organizational learning in order to advance public health goals.

7.5 Contribute to maintaining organizational performance standards.

7.6 Demonstrate an ability to build community capacity by sharing knowledge, tools, expertise and experience.

Table 25: Public Health Core Competencies: Additional Resources

Summary Report of Draft Set of Public Health Workforce Core Competencies[73]

This summary report of the Federal/Provincial/Territorial Joint Task Group on Public Health Human Resources that examines the development of a draft set of public health workforce core competencies can be accessed at: http://www.phac-aspc.gc.ca/php-psp/pdf/core_public_ealth_competencies_report_english.pdf

Pan Canadian Core Competencies for Public Health Website[71]

The Public Health Agency of Canada's website contains a section on the Pan-Canadian core competencies for public health. This section can be accessed at: http://www.phac-aspc.gc.ca/ccph-cesp/index-eng.html

Public Health Core Competencies On-Line Learning Modules[74]

Developed by the Ontario Public Health Association, these on-line learning modules explore topics such as why core competencies, and what is happening at the Public Health Agency of Canada. Modules also examine the draft competencies and review applications and implications for the competencies. These modules can be accessed at: http://www.opha.on.ca/projects/phcci/tools/learning/index.html

Skills Enhancement for Public Health[75]

To assist public health providers in acquiring and maintaining the skills required to meet the public health core competencies, on-line continuing education modules have been developed by the Public Health Agency of Canada. Topics covered include basic epidemiological concepts, measurement of health status, descriptive epidemiologic methods, epidemiology of chronic diseases, outbreak investigation and management, introduction to public health surveillance and applied epidemiology: injuries. This website can be accessed at: http://www.phac-aspc.gc.ca/sehs-acss/index.html

Additional Resources

Please find below some links to additional information that may be useful for public health practice and ongoing professional development.

Canadian Injury Prevention and Control Curriculum[76]

This website provides information on a curriculum that shares information on concepts in public health and issues specific to injury prevention and control. There are trained facilitators throughout the Atlantic provinces for this curriculum, and sometimes upcoming workshops in Atlantic Canada are not posted on this national site. It is recommended that contact is made with a provincial representative for further details regarding upcoming workshops. This site can be accessed at: http://www.canadianinjurycurriculum.ca/index.htm

Community Health Promotion Network Atlantic[77]

This website provides links to many health promotion resources for individuals, groups and organizations within the Atlantic provinces. This website is available at: http://www.chpna.ca/

Health Promotion Clearinghouse[78]

This website provides links to organizations and resources related to health promotion within Nova Scotia and beyond. This site can be accessed at: http://www.hpclearinghouse.ca

Atlantic Network of Injury Prevention[79]

This website provides information regarding injury prevention relevant to the Atlantic Provinces. This network strives to promote injury prevention activities within Atlantic Canada, and it provided directions for signing up for the site's listserv. This website can be found at: http://www.anip.ca/

Public Health Agency of Canada's List of Public Health Publications[80]

This list contains suggested references for topics such as public health surveillance, information sharing practices, injury surveillance, the National Collaborating Centres for Public Health, the

public health workforce, core competencies, learning, health human resources, and public health practice. The list can be accessed at: http://www.phac-aspc.gc.ca/php-psp/publication_e.html

Health Resources Centre List of Public Health Publications[81]

This list contains suggested references for a wide array of public health topics. This list can be accessed at: http://www.cpha.ca/english/hrc/hrcpubs/index.htm

Social Determinants of Health Listserv[82]

This is a link to York University's listserv on the social determinants of health. It can be accessed at: https://listserv.yorku.ca/archives/sdoh.html

Building a Better Tomorrow Modules[83]

This fact sheet briefly reviews the development and implementation of the Building a Better Tomorrow project within Atlantic Canada. Presentations and manuals related to some or all of these modules may be available within the province you work. The modules developed were:

- Understanding Primary Health Care
- Building Community Relationships
- Team Building (two modules)
- Conflict Resolution
- Facilitating Adult Learning (two modules)
- Electronic Patient Record
- Program Planning and Evaluation

This fact sheet is available at: http://www.health-policy-branch.hc-sc.gc.ca/hpb/phctf/pchtf.nsf/lkAttachments/EF2BBD72C3C2F8728525728F0064DB45/$File/32E_FS_BBT.pdf

Where to Go from Here

This orientation module has only briefly introduced and reviewed many of the concepts related to public health. To continue learning and reflecting on public health practice, you might consider completing the following types of activities:

- Determine if there was theory or a concept presented in the module you would like to learn more about and how it related to everyday practice. Ask a co-worker to provide you with an example from their everyday practice that illustrates the issue more clearly for you;

- Choose a section of the document and have a discussion with co-workers regarding how it impacts the work you do in your community;

- Ask a co-worker to outline for you the agencies, organizations and individuals with whom your department or area regularly works;

- Review public health legislation documents that are most relevant to your area of practice;

- Investigate if presentations or manuals related to the Building a Better Tomorrow project[83] are available in your workplace and review those of greatest interest to you (topics listed on page 55);

- Consider completing one or more of the Public Health Core Competencies On-Line Learning Modules,[74] (link provided on page 53); and/or

- Consider completing components of the Skills Enhancement for Public Health modules,[75] (link provided on page 53).

Notes

Evaluation Form

For each question, please share any comments or feedback you have about this module.

1. Please select the most appropriate response below. You are best described as:

A. A new public health practitioner who is working for the first time in public health.
B. A new practitioner in your current public health position, but you have worked in public health in other jobs previously.
C. A public health practitioner who has been working within your present job for at least one year.
D. An employee within a health organization or another health sector other than public health.
E. Other (please explain below).

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2. By completing this module, did you gain new knowledge about public health and/or reflect on your current understanding of public health? Please explain.

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3. What sections of the module did you find most useful?

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4. **What recommendations do you have for improvements to the module? (When responding to this question please consider items such as the module's content, layout, readability, and the length of time it took you to complete the module.)**

5. **Did you explore any of the additional resources or web links suggested in the module? If so were these links useful?**

6. **Did you discuss with colleagues any issues and/or questions you had while reading the module? If so, was discussion with others beneficial? Please explain your answer.**

7. **Do you have any other comments or feedback related to the module that you would like to share?**

Thank you for taking time to complete this evaluation. Please discuss your feedback with you supervisor.

End Notes

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