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***ENHANCING THE HEALTH OF THE POPULATION:
THE ROLE OF CANADIAN FACULTIES OF MEDICINE***

***A Vision Paper
Presented to the Council of Deans
of Faculties of Medicine***

***Public Health Task Group
Association of Faculties of Medicine of Canada***

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TABLE OF CONTENTS

Executive Summary.....	1
Recommendations	3
Introduction	4
Why is Public Health Important?	4
What is the Population Perspective on Health?	6
Current Initiatives to Enhance Public Health in Canada.....	6
Faculties of Medicine and the Health of Populations: A Vision.....	8
Recommended Strategies	10
Conclusion.....	13
References	13
Appendix 1: Public Health Task Group Recommendations to the Council of Deans and Population Health Learning Objectives – May 2005	15
Appendix 2: Essential Roles and Draft Key Competencies in Public Health for Physicians Graduating from Medicine.....	27

EXECUTIVE SUMMARY

Public Health: Fostering the Health of Populations

In Canada, events such as SARS; the E. coli outbreak in Walkerton, Ontario; the increase in chronic preventable diseases; the impact of environmental contamination on health; increases in depression, suicide and other mental health problems among youth; the risk of bio-terrorism, natural disasters and pandemics; and the increasing importance of global effects on health has led to a recent emphasis on enhancing the public health system. However, Canada has been in the forefront of a focus on the health of populations for many decades prior to this.

Public health also is an emerging concern among medical educators. In 2004, the Association of Faculties of Medicine of Canada (AFMC) established a Public Health Task Group as part of its initiative on social accountability. This paper outlines the Task Group's vision of the role of Canadian Faculties of Medicine in enhancing the health of the population, with a focus on undergraduate education.

In this paper, the term "public health" refers to the population-based approach to health. To be clear, the term does NOT refer to the "publicly funded" health care system.

For this paper, public health is defined as the combination of sciences, skills and attitudes that are directed to the maintenance and improvement of the health of a population or populations through collective or social actions. The programs, services and institutions involved emphasize both the prevention of disease and the health needs of the population as a whole. The core functions of public health are: health surveillance; health promotion; disease and injury prevention; health protection; population health assessment; and emergency preparedness.

The impact of social, economic and behavioural determinants of health is now quite well known to governments and health organizations. Unfortunately, a key problem lies in turning this understanding into concrete actions that have a positive impact on communities and individuals. Faculties of Medicine have a critical role to play in this shift.

In fact, when used in the provision of health services and clinical activities, public health concepts make a significant contribution to:

- continuous quality improvement in health care through a focus on population needs;
- patient management in a physical, cultural and socioeconomic context; and
- orienting the health system toward the prevention and control of emerging and chronic diseases.

However, medical students who recently participated in focus groups on public health education stated that:

- public health lectures are boring;
- public health content is not incorporated into the rest of the curriculum and hence seen as not relevant;
- there are no opportunities to be exposed to public health in the field; and
- public health is perceived as being "not real medicine." (Hau and Tyler, 2006).

A further indication of the low level of interest in public health is that of all medical students who participated in the Canadian Resident Matching Service (CaRMS) residency match in 2005, less than 1% ranked community medicine as their first-choice discipline. (Canadian Resident Matching Service, 2006)

A Vision for Public Health in Faculties of Medicine

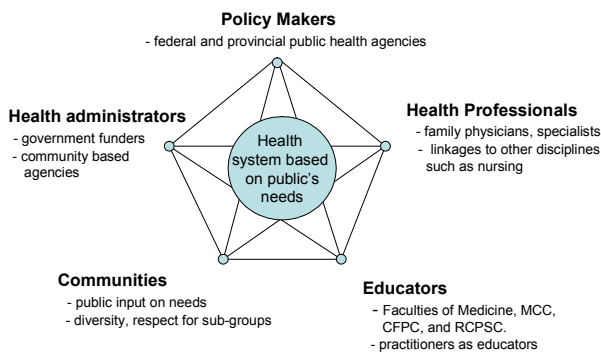
Our vision for public health education in Faculties of Medicine, which elaborates on the one presented to the Council of Deans in May 2005, is

All physicians graduating from Canadian Faculties of Medicine should be able to practice medicine with the concepts of public health as key elements in their day-to-day activities (this could apply to the community in which they work and/or their practice population), and see themselves as a key component of the public health system.

AFMC wants to work in partnership with Deans of Medicine to enhance public health competencies in all medical school graduates. Similar to other subjects, the exact format of training and the specific curriculum used in each Faculty of Medicine will vary but the core content will be consistently applied to meeting the education objectives (outlined in different formats) in appendices 1 and 2.

We recognize that the teaching of public health poses its own challenges. However, we see a future where public health education is supported by a dynamic network of public health faculty who share resources, faculty development tools and methods of student assessment. These undergraduate educational activities and resources in public health also contribute to postgraduate and continuing education programs, offered collaboratively with local, provincial and national public health organizations. Where feasible, models of interdisciplinary education also will be explored.

Partnership Pentagram for Social Accountability:
adapted to public health



Immediate Outcomes

The Task Group proposes the following short-term outcomes for enhanced public health education (that is, within the next two years).

- Recommendations from the Public Health Task Group, as well as population health education objectives are actively used in enhancing curriculum, assessing students and evaluating public health education throughout the country.
- AFMC creates a national network of teachers of public health.
- The national network shares existing public health teaching resources and creates new ones to fill gaps.
- The Deans of Medicine actively support faculty awareness of the importance of public health among all departments and faculty.
- Faculties of Medicine have student interest groups in public health and community medicine, which may be interdisciplinary with faculties such as nursing, social work, and nutrition.

- At the national level, AFMC has partnerships with various national organizations with similar goals related to public health.
- At the provincial or regional level, each Faculty of Medicine develops local partnerships that further the educational, research and service mandate for public health.

Longer-term Outcomes

In the longer-term, the Task Group envisions the following outcomes.

- AFMC works with Faculties of Medicine to create faculty development resources in the area of public health.
- Faculties of Medicine conduct and share research that assesses and compares different methods of public health education, and apply this knowledge to teaching.
- The Public Health Task Group, working together with the Medical Council of Canada (MCC), College of Family Physicians of Canada (CFPC) and Royal College of Physicians and Surgeons of Canada (RCPSC) achieve higher standards of public health education for physicians.
- The Deans of Medicine and AFMC secure increased funding for public health research, including research in health human resource planning in public health and ways to increase recruitment into community medicine.
- The Public Health Task Group collaborates in interdisciplinary opportunities with organizations such as the Canadian Association of Schools of Nursing (CASN) in public health research and education.

For a complete list of the recommendations by topic area, please see the next page. For a detailed rationale for the recommendations, see pages 10 to 13 of the paper.

RECOMMENDATIONS

Recommendation 1: The Task Group re-affirms its population health education objectives, originally formatted for the Medical Council of Canada, and reformatted in draft form to complement the Royal College of Physicians and Surgeons of Canada CanMEDS physician roles and the College of Family Physicians of Canada Four Principles of Family Medicine. The Task Group recommends that Faculties of Medicine work with the Public Health Task Group to finalize the education objectives and then incorporate them into existing curriculum.

Recommendation 2: The Task Group recommends that Deans of Medicine and AFMC support the creation of a network of public health teachers. The network will provide a collegial environment that helps strengthen teaching programs. Each Faculty of Medicine is encouraged to designate at least one representative to this group.

Recommendation 3: The Task Group recommends that the network be responsible for the creation and sharing of public health undergraduate teaching resources throughout Canada. It is further recommended that these resources be made available for postgraduate and continuing education. Where major gaps exist and there are efficiencies of scale, the network, facilitated by AFMC, should develop new resources for public health education.

Recommendation 4: The Task Group recommends that the network, assisted by AFMC, develop a repository of faculty development resources (which match the educational resources) that is hosted on the AFMC web site.

Recommendation 5: The Task Group recommends that Faculties of Medicine conduct and share research that uses standard measures of student assessment to evaluate different methods of public health education. This knowledge will contribute to understanding the relative value of each teaching method.

Recommendation 6: The Task Group recommends that the Deans of Medicine actively support faculty development that enables the principles of public health to be incorporated into the teaching of all departments and faculty.

Recommendation 7: The Task Group recommends that Faculties of Medicine promote formation of student interest groups in public health and community medicine. Those focused on public health may be interdisciplinary with faculties such as nursing, social work, and nutrition.

Recommendation 8: The Task Group recommends that the Deans of Medicine actively support the Task Group in its on-going discussions with the Medical Council of Canada, College of Family Physicians of Canada and Royal College of Physicians and Surgeons of Canada. In the long term, the Task Group recommends that the Deans of Medicine support their work with the national accreditation bodies in examining the accreditation standards to ensure that public health perspectives are adequately addressed.

Recommendation 9: The Task Group recommends that the Deans of Medicine actively support the Task Group in creating partnerships with various national organizations, particularly those that are mutually supportive of the goals of the AFMC and the relevant agencies.

Recommendation 10: At the provincial or regional level, the Task Group recommends that each Faculty of Medicine develop local partnerships that will further their educational, research and service mandates relative to public health.

Recommendation 11: The Task Group recommends that the Deans of Medicine advocate for increased funding for public health research, including research in health human resource planning and how to increase recruitment into community medicine.

Recommendation 12: The Task Group recommends that the Deans of Medicine support the Task Group as it explores potential interdisciplinary sources of collaboration in the teaching of public health with organizations such as the Canadian Association of Schools of Nursing (CASN). Such programs may become models for interdisciplinary education.

INTRODUCTION

In April 2004, the Partners' Forum for Social Accountability of Medical Schools, with representatives from health professional organizations, health care managers, academia and the community, identified the convergence of medical care with public health as one of three priority areas for increased action. A Public Health Task Group was established and made recommendations to the Council of Deans in 2005 related to:

- increasing awareness of the need to apply public health concepts within educational and research activities and in practice;
- enhancing undergraduate education by the adoption of curriculum objectives specific to public health;
- expanding the work of the Task Group to include faculty development, postgraduate education and continuing professional development; and
- addressing health human resource issues.

A copy of the Task Group's report is provided as Appendix 1.

This paper builds on those recommendations and proposes more specific actions to enhance the integration of public health knowledge and practice at every stage of medical education.

WHY IS PUBLIC HEALTH IMPORTANT?

Hippocrates (460-377 B.C.) was aware that individual health was influenced by lifestyle and the environment even without the knowledge and technology that we have available today. Yet, at the beginning of the twenty-first century, we have seen numerous reports at international, national and provincial levels emphasizing the need to enhance training in the areas of population and public health. For example, in the United States, there has been great concern over bioterrorism, particularly post 9/11. This prompted the creation of a specific set of national objectives on public health.

Public Health Crises Affect Our Health

In Canada, recent emphasis on enhancing the public health system and teaching in the area of population health has been prompted by recent events such as SARS. Other examples of the need for an enhanced public health system include:

- the E. coli outbreak in Walkerton, Ontario caused by the absence of an adequate health protection system;
- the increase in chronic preventable diseases such as diabetes and obesity, lung cancer and smoking, and risk factors for such diseases;
- the impact of environmental contamination on health, e.g., the "Tar Ponds" in Nova Scotia and air pollution in Alberta (sour gas), southern B.C., Ontario and Quebec (smog) ;
- the increase in depression, suicide and other mental health problems among young people, particularly in the Aboriginal population;
- the risk of bioterrorism, natural disasters and pandemics; and
- the increasing importance of global effects on health.

In this paper, the term "public health" refers to the population-based approach to health. To be clear, the term does NOT refer to the "publicly funded" health care system.

A Long History of a Focus on Populations

However, it is wise to remember that increased attention to health promotion, disease prevention and population health has developed worldwide over the last 60 years. A few highlights are presented here.

In 1948, shortly after it was established, the World Health Organization (WHO) developed its definition of health, which has never been altered:

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

(World Health Organization, 1948)

This definition has been the basis of many subsequent efforts to improve the health status of individuals and populations.

In 1974, the Canadian government's white paper, *A New Perspective on the Health of Canadians* (Lalonde, 1974) proposed that changes in lifestyles or social and physical environments would likely lead to more improvements in health than would be achieved by spending more money on existing health care delivery systems. The Lalonde Report brought Canada international attention for its holistic approach to health.

In 1986, The *Ottawa Charter for Health Promotion and Achieving Health for All: A Framework for Health Promotion* expanded on the white paper by focusing on the broader social, economic and environmental factors that affect health. It also redefined health as a resource for everyday living and not an end in and of itself. (World Health Organization, Health and Welfare Canada and Canadian Public Health Association, 1986)

Then, in 1994, the Federal, Provincial and Territorial Advisory Committee on Population Health presented Canada's Ministers of Health with *Strategies for Population Health: Investing in the Health of Canadians*. This document proposed a national framework for action on health disparities and the broad determinants of health, echoing and expanding upon previous broad perspectives.

Most recently, *The Bangkok Charter for Health Promotion in a Globalized World* affirms the importance of addressing the determinants of health in a globalized world through health promotion. (World Health Organization, 2005)

Still More to Do

Despite this attention to the importance of population and public health, the Commission on the Future of Health Care in Canada, chaired by the Hon. Roy Romanow, stated in its final report in 2002:

The impact of determinants of health and lifestyle choices is well known to governments and to health care organizations. Unfortunately, the key problem lies in turning this understanding into concrete actions that have an impact on individual Canadians and communities. In many areas in public health, the gap between knowledge and practice is still too great.

(Commission on the Future of Health Care in Canada, 2002, p.129)

Also in 2002, the Standing Senate Committee on Social Affairs, Science and Technology, chaired by the Hon. Michael J.L. Kirby, affirmed that it:

.... believes that there are enormous potential benefits to be derived from health and wellness promotion, disease and injury prevention, public health and health protection and population health strategies, measured primarily in terms of improving the health of Canadians, but also in terms of their positive long-term financial impact on the health care system.

(Standing Senate Committee on Social Affairs, Science and Technology, 2002, Vol. 6, Section 5, Chapter 13)

Learning from SARS – Renewal of Public Health in Canada (the Naylor report) following the SARS outbreak in Canada made recommendations relating to the need for:

- a national public health human resources strategy;
- continuing professional development of practicing physicians;
- a focus on emerging and re-emerging infectious diseases;
- monitoring the impact of globalization; and
- emergency preparedness.

The report also noted the need for professional development that includes undergraduate, postgraduate and continuing medical education. (National Advisory Committee on SARS and Public Health October 2003)

Canada shares medical school accreditation with the United States, thus it is relevant to note that over the past decade, the Association of American Medical Colleges (AAMC) has focused attention on public health issues and specifically on the teaching of population health concepts in the undergraduate and postgraduate curriculum. Under the Medical Schools Objectives Project, the Learning Objectives for Medical Student Education Guidelines for Medical Schools (1998) state that

Physicians must feel obliged to collaborate with other health professionals and to use systematic approaches for promoting, maintaining, and improving the health of individuals and populations.

(American Association of Medical Colleges, 1998, p.8)

In 2001, a cooperative agreement between the AAMC and the Centers for Disease Control and Prevention (CDC) brought together the increasingly complementary and interdependent disciplines of medicine and public health –

one of its aims is to enhance medical training in public health.

Many examples can also be found of individual medical schools in Australia, the United Kingdom and other European countries where students are expected to be competent in the areas of public and population health.

WHAT IS THE POPULATION PERSPECTIVE ON HEALTH?

Public health has the health of populations as its priority in contrast to medical care where the emphasis is on the individual. It is important to distinguish between the concepts of public health as articulated in this paper and the government-funded public health care system.

With the identification of core competencies in public health, there is growing consensus on essential public health functions. The following describes the activities that are normally associated with public health practices across the country.

Essential Public Health Functions

Health surveillance – Surveillance includes collecting, interpreting and communicating health data and then acting on this information. It helps in the early recognition of outbreaks, disease trends, cases of illness, and factors affecting health.

Health promotion – Public health practitioners work with individuals, agencies and communities to understand and improve the health of the population. Health promotion includes strengthening the skills of individuals to encourage healthy behaviours and it also includes building healthy social and physical environments to support these behaviours.

Disease and injury prevention – Many diseases can be prevented, delayed or alleviated through primary, secondary and tertiary prevention practices. There are measures to prevent infectious diseases, and much also can be done to prevent or delay chronic diseases, for example, by ensuring access to healthy food and opportunities for physical activity, and supporting smoking cessation. Many injuries can be avoided through measures such as ensuring safe equipment in playgrounds, and seat belt and bicycle helmet use.

Health protection – Health protection is the recognition of health hazards and then the application of systematic methods to reduce exposure to them. The best examples

include: ensuring safe food and water supplies; providing drug safety regulation; protecting people from environmental threats; and having a regulatory framework for controlling infectious diseases in workplaces. Ensuring proper food handling in restaurants and establishing smoke-free bylaws are examples of local health protection measures.

Population health assessment – By understanding the factors that influence good health and those that create health risks, we can ensure the appropriate services and policies are in place.

In the current global environment, **emergency preparedness**, whether in response to emerging infectious diseases, bioterrorism or natural disasters, is another aspect of public health that is essential to the protection of the health of the population.

A Population Health Approach

Through a population-based approach, public health recognizes that the health of populations and individuals is shaped by a wide range of factors in the social, economic, natural, built, and political environments. In turn, these factors interact in complex ways with each other and with innate individual traits such as sex and genetics. Such a broad perspective on health takes into account the potential effects of social connectedness, economic inequality, social norms, and public policies on health-related behaviours and on health status. Such a population perspective on care should be brought to the fore in the practice of every physician in Canada. **In this paper, we use the term “public health” to encompass both the population health approach to practice as well as the functions of public health as outlined above.**

CURRENT INITIATIVES TO ENHANCE PUBLIC HEALTH IN CANADA

Presently, there are a variety of initiatives underway to enhance public health practice in Canada. These activities range from defining core competencies for public health practitioners to designing new and enhanced curricula for all health professionals.

Federal Government Involvement

The federal government established the Public Health Agency of Canada (PHAC) in 2004 with a commitment to help protect the health and safety of all Canadians. The Agency’s mandate is to improve public health infrastructure by focusing on workforce development, information

and knowledge systems, and public health law and information policy through leadership, innovation and concerted action. Its activities focus on:

- preventing chronic diseases, including cancer and heart disease,
- preventing injuries, and
- responding to public health emergencies and infectious disease outbreaks.

A draft compilation of public health core competencies has been developed and consultations are taking place at present. PHAC also funded a series of focus groups for medical students on public health education.

PHAC's work to date has established there is a clear need for increased and more relevant education in public health at all levels. The shortage of adequately trained public health physicians is affecting not just the delivery of public health services in the present, but is a limiting factor in plans to strengthen public health for the future.

An important initiative established by the Conference of Deputy Ministers of Health is the Public Health Human Resources Task Group (PHHRTG). Its purpose is to implement the Pan-Canadian Framework for Public Health Human Resources Planning. This group has a much broader mandate for public health as a whole; hence, the AFMC Task Group will link with PHHRTG to complement its activities.

The Health Human Resource Strategies Division (HHRSD) at Health Canada, which has provided ongoing support for the social accountability initiative, collaborates with the provinces, territories and other key health-related organizations to improve HHR planning and coordination. Its focus is on three critical areas: health human resources planning – ensuring we have enough of the right types of health-care providers to meet the needs of Canadians; recruitment and retention – encouraging more people to enter the health-care field and improving working conditions to keep them there; and interprofessional education for collaborative patient-centred practice – changing the way we educate health providers so Canadians will have better and faster access to the health-care provider they need when they need it. The vision of the Public Health Task Group for an enhanced approach to public health resonates with all three areas.

Health Professional Associations

The *Canadian Medical Association (CMA)* has established an Office of Public Health and recognizes the role of physicians in prevention and health promotion in a policy paper that includes the following statement.

The CMA views prevention and health promotion as a responsibility to be shared among all health care providers, rather than the sole responsibility of any one group. The spectrum of health promotion and disease prevention programs contains the following five levels: (1) health enhancement, (2) risk avoidance, (3) risk reduction, (4) early identification and (5) complication reduction. The role of physicians in this continuum of patient care is a strong one, with the potential for further enhancement.

(Canadian Medical Association
Office for Public Health, 2002)

Medical Colleges

The College of Family Physicians of Canada (CFPC) has recently published *The Role of the Family Doctor in Public Health and Emergency Preparedness: A Discussion Paper* (2005). The paper examines the role of family medicine and family doctors in public health, including the part played by family doctors in health promotion, disease prevention, chronic disease management and, in particular, preparing for and managing public health emergencies.

The Royal College of Physicians and Surgeons of Canada (RCPSC) is in the process of reviewing the CanMEDS core competencies for all specialty groups. AFMC plans to work with RCPSC to promote exposure to relevant public health skills in all training programs.

Medical Education

The Medical Council of Canada (MCC) is in the process of reviewing the Population Health, Ethical, Legal and Organizational (PHELO) objectives in the LMCC examination in recognition of the consistently poor performance among Canadian medical students on the PHELO items.

The Canadian Association of Schools of Nursing (CASN) has created a Task Force on Public Health to develop guidelines ensuring that all baccalaureate graduates of Canadian schools of nursing have the foundation to meet the Community Health Nursing Standards of Practice.

There is a dearth of information on the number of community medicine specialists currently practicing community medicine as well as workforce needs for the future. However, it is known there is little interest among medical undergraduates in entering community medicine – of all medical students who participated in the Canadian Resident Matching Service (CaRMS) residency match in 2005, less than 1% ranked community medicine as their first-choice discipline. (Canadian Resident Matching Service, 2006) Among students who do choose community medicine, many opt for a joint family medi-

cine/community medicine training program, whereas in the past the residency positions were often filled by family physicians re-entering training.

The Association of Faculties of Medicine of Canada Public Health Task Group (AFMC – PHTF) examined where they could have the most influence and the consensus was that no other group is examining the need for enhanced training in undergraduate medicine.

Two surveys of the undergraduate deans at each Faculty of Medicine were carried out by the Task Group. In 2005, the purpose of the survey was to determine the status of teaching in public health. Results showed an inconsistency in how and when these concepts were taught. In 2006, the Task Group was interested in knowing whether the objectives submitted to the Council of Deans in 2005 were being incorporated into the curriculum. While many of the Faculties were aware of these objectives, there were challenges to incorporating them into the curriculum related to time issues, availability of resources (experts to teach, educational material and appropriate community settings for clinical rotations) and curriculum committee buy-in.

***Comment by faculty made during the survey
of Faculties of Medicine by AFMC, 2006***

We need to continue to enhance the integration of these concepts with the remainder of the curriculum. As it stands now, we are a bit apart from the rest of the curriculum with its clinical focus.

A series of focus groups for medical students was conducted this year by interested students (Hau and Tyler, 2006) and supported by PHAC. The results showed public health is taught predominantly as a part of a basic/social sciences package early in the curriculum, rather than as a clinical topic. Teaching is usually delivered in a lecture format rather than through interactive learning. Some concerns expressed by students included:

- public health lectures are boring;
- public health content is not incorporated into the rest of the curriculum and hence seen as not relevant;
- there are no opportunities to be exposed to public health in the field; and
- public health is perceived as being “not real medicine.”

Hence, basic education in public health, or a potential career in community medicine, is not valued.

***Some student comments from focus groups held
in four medical schools across Canada
(Hau and Tyler, 2006)***

PH gets very little good press in med school... some “SPIN and SNOOT” stuff [epidemiology], but after that, not much is said about it. Most people don't really like it, are not interested in it, and pay very little attention to it.

Specialists sometimes see it as interfering with their practice... other professors sometime seem to begrudge the time devoted to it in our curriculum. In general I think there is a lack of respect among certain groups... this makes me think that working in public health would sometimes be a thankless job.

There should be more teaching of public health in an interactive setting rather than only didactic lectures.

**FACULTIES OF MEDICINE AND THE
HEALTH OF POPULATIONS: A VISION**

In 2002, the Council of Deans accepted the concepts of social accountability as envisioned in the document *Social Accountability: A Vision for Canadian Medical Schools*. (Health Canada, 2001) These were based on the premise that medical schools have the obligation to direct their education, research and service activities to meeting the needs of the communities they serve. Public health is, by definition, directed to meeting the needs of the community.

A future vision for Canadian medical schools in incorporating the concepts of public health and population health is

All physicians graduating from Canadian medical schools should be able to practice medicine with the concepts of public health as key elements in their day-to-day activities (this could apply to the community in which they work and/or their practice population), and see themselves as a key component of the public health system.

To achieve this vision, Canadian Faculties of Medicine should:

- integrate public health concepts into the education and training curricula and link them to the widely accepted Four Principles of Family Medicine of the CFPC and to the RCPSC's CanMEDs roles;
- determine the impact of their activities (education and training, service and research) on the enhancement of the health of the population they serve and of the health care system as a whole; and
- recognize that incorporating public health into their activities and roles is a socially accountable thing to do.

The Roles of Faculties of Medicine

Faculties of Medicine have roles in education and training of health human resources, in service provision, and in research.

They have responsibility for the **education and training** of health professionals at all four levels: undergraduate, graduate, postgraduate and continuing professional development. This paper focuses mainly on the area of undergraduate education, but underscores the importance of the population perspective on health in postgraduate and continuing education and in faculty development. All three areas of knowledge, skills and attitudes should be based on the core competencies of public health.

Specific areas that need to be addressed are:

- enhancing undergraduate curriculum by incorporating public health principles into training programs for all disciplines, including family medicine so that all graduating physicians are aware of and apply public health principles in practice;
- affording students the opportunity to be exposed to the specialty of community medicine and other public health experts;
- continuing professional development of practicing physicians;
- developing faculty in the area of public health;
- creating formal affiliation agreements for community-based educational training sites in collaboration with public health agencies/health authorities; and
- where external expertise in public health is needed and provided by non-faculty members, those individuals should be provided with incentives (both financial and non-financial) to participate in the education and training of students and residents.

The Task Group sees that the activities listed above are not mutually exclusive. For example, the creation of faculty development materials could easily serve as the basis for modules in continuing education and/or postgraduate training. Hence these resources need to be developed with the broadest utility possible.

In the **service** arena, medical schools should develop links with public health agencies/health authorities for input/consultation on an ongoing and as needed basis, as well as for the development of training sites as outlined above.

In the area of **health human resources**, medical schools should provide support for health human resource planning in collaboration with federal/provincial/territorial governments with the knowledge that schools of public health in universities without medical schools are being established.

Research into the core public health function of population health assessment (recognizing that identifying community needs is a socially accountable activity), health surveillance, health promotion, disease and injury prevention and health protection should be supported by the medical schools.

RECOMMENDED STRATEGIES

As a result of initiatives by the Public Health Agency of Canada to address public health human resources issues, and the Royal College of Physicians and Surgeons of Canada review of postgraduate training in community medicine, the AFMC group chose to focus its efforts on undergraduate medical education.

Reaffirming Educational Objectives in Public Health

The Task Group re-affirms the objectives that were outlined in the previous year's report. The Task Group recognizes that many Faculties of Medicine are moving towards the use of the Four Principles of Family Medicine and CanMEDS roles as the basic format for their overall curriculum objectives. Hence the Task Group has realigned its education objectives in this format. The objectives in the Medical Council of Canada format are provided as part of Appendix 1 while the reformatted draft objectives are provided in Appendix 2. The Task Group would like to work with the Faculties of Medicine to finalize the education objectives and have them incorporated into existing curriculum.

Recommendation 1: *The Task Group re-affirms its population health education objectives, originally formatted for the Medical Council of Canada, and reformatted in draft form to complement the Royal College of Physicians and Surgeons of Canada CanMEDS physician roles and the College of Family Physicians of Canada Four Principles of Family Medicine. The Task Group recommends that Faculties of Medicine work with the Public Health Task Group to finalize the education objectives and then incorporate them into existing curriculum.*

**Comment by faculty made during the
survey of Faculties of Medicine
by AFMC, 2006**

If there is a national network of people who can assist, bring them on, I say!

Creating a Collaborative Environment for Teachers of Public Health

The Task Group believes that there are two major constraints to the realization of its vision for public health education in undergraduate medicine. The first is the

relative lack of public health expertise in the academic health science centres, in particular, the number of physicians with public health training. The second constraint is that the existing teachers of public health are relatively isolated from each other and do not have a great deal of collegial support. The goal is to create and link a cadre of public health scholars so as to enhance the public health curriculum across all 17 Faculties of Medicine. One proven means of launching the network of public health educators is to hold a national forum with representatives from each of the Faculties of Medicine.

Recommendation 2: *The Task Group recommends that Deans of Medicine and AFMC support the creation of a network of public health teachers. The network will provide a collegial environment that helps strengthen teaching programs. Each Faculty of Medicine is encouraged to designate at least one representative to this group.*

Developing and Sharing Resources for Curriculum Development, Faculty Development and Student Assessment

The Task Group believes that we need to incorporate more public health concepts into the undergraduate curriculum. From a quick review of existing programs, there are different models for doing this. One is by creating dedicated courses (e.g., University of Toronto) or by integrating public health into existing courses (e.g., Université de Sherbrooke). Another means to enhance curriculum to respond to population needs is to include community representatives on curriculum committees. The Task Group believes that each Faculty of Medicine needs to identify its own process for such incorporation and recognizes that it will vary by local situation.

The Task Group also believes that, given the limited resources available, it is impractical for all 17 Faculties to produce similar resources. Rather, AFMC should assist Faculties of Medicine to identify existing resources that can be shared and then collaboratively develop new resources and/or tools that can be made available throughout the country. This model is similar to another successful AFMC project – Educating Future Physicians in End-of-Life and Palliative Care (EFPPEC).

Recommendation 3: *The Task Group recommends that the network (see Recommendation 2) be responsible for the creation and sharing of public health undergraduate teaching resources throughout Canada. It is further recommended that these resources be made available for postgraduate and continuing education. Where major gaps exist and there are efficiencies of scale, the network,*

facilitated by AFMC, should develop new resources for public health education.

The Task Group recognizes that faculty development in teaching public health may also be a major concern for many medical schools and that creation of faculty development resources may be difficult for each Faculty of Medicine to do independently. Faculty development is central to the enhancement of education and training in public health in the undergraduate and postgraduate years. Involvement of external public health experts in faculty development and teaching of students should be fostered.

Recommendation 4: *The Task Group recommends that the network, assisted by AFMC, develop a repository of faculty development resources (which match the educational resources) that is hosted on the AFMC web site.*

Finally, the Task Group believes that each Faculty of Medicine needs to be able to meaningfully assess student knowledge, skills and beliefs in this area. Hence there is a need to collaborate in creating meaningful methods of student assessment and evaluation.

Recommendation 5: *The Task Group recommends that Faculties of Medicine conduct and share research that uses standard measures of student assessment to evaluate different methods of public health education. This knowledge will contribute to understanding the relative value of each teaching method.*

Raising Awareness Among All Faculty and Students

Raising awareness of the *imperative to improve training of students* among faculty and students is a precursor to implementing changes that may take time. Additions to undergraduate curricula are routinely difficult to make due to time pressure in the undergraduate years; as well as lack of availability of appropriate educational resources. With support from the Deans of Medicine, faculty leaders should make curriculum committees aware of the value of integrating public health concepts into the traditional curriculum and training methods. **Exposure to public health thinking must permeate all levels of the undergraduate curriculum.**

Faculty development is critical to enhanced public health content in the undergraduate curriculum. It also is the means by which this public health approach can be extended into postgraduate training and continuing professional development. The relevance of these principles to faculty should be emphasized, as teachers are role models for the students.

Recommendation 6: *The Task Group recommends that the Deans of Medicine actively support faculty develop-*

ment that enables the principles of public health to be incorporated into the teaching of all departments and faculty.

Student interest groups are an increasing mechanism for promoting interest in an area; public health is an area that would benefit from the establishment of such groups at each of the Faculties of Medicine. Faculty should encourage their development.

Recommendation 7: *The Task Group recommends that Faculties of Medicine promote formation of student interest groups in public health and community medicine. Those focused on public health may be interdisciplinary with faculties such as nursing, social work, and nutrition.*

Incorporating Public Health Concepts Into Examination and Assessment Processes

A major means of ensuring that public health becomes engrained in the undergraduate curriculum is to encourage the organizations responsible for national examinations, specialty certification and accreditation of Faculties of Medicine to include questions on these topics in their examinations and ongoing assessment. Through the Public Health Task Group, the AFMC has begun to work collaboratively with the Medical Council of Canada (MCC) on the population health objectives. These objectives, (presented at last year's conference to the Council of Deans and the AFMC Undergraduate Medical Education Committee (undergraduate deans) have been forwarded to the MCC and discussions on their further integration are underway.

The Task Group has representatives from the College of Family Physicians of Canada and the Royal College of Physicians and Surgeons of Canada. Hence these two organizations are actively involved and will continue to work with AFMC Public Health Task Group in the future. In the longer term, the Task Group would like to work with the accreditation bodies to ensure public health is adequately addressed in the accreditation of Faculties of Medicine.

Recommendation 8: *The Task Group recommends that the Deans of Medicine actively support the Task Group in its on-going discussions with the Medical Council of Canada, College of Family Physicians of Canada and Royal College of Physicians and Surgeons of Canada. In the longer term, the Task Group recommends that the Deans of Medicine support their work with the national accreditation bodies in examining the accreditation standards for medical education to ensure that public health perspectives are adequately addressed.*

Developing Partnerships

At a national level, AFMC must continue to maintain partnerships with a number of organizations in order to address public health issues. Health Canada, specifically Health Human Resources Division and the Public Health Agency of Canada, together with provincial and territorial governments have the responsibility for health human resource planning, but cannot do this in isolation from Faculties of Medicine. Thus, it is incumbent on AFMC, with the support of the Deans of Medicine, to seek out and collaborate with these government agencies.

Other organizations, such as the Canadian Public Health Association (CPHA) and the Community and Hospital Infection Control Association (CHICA) could be additional resources to assist in teaching.

Recommendation 9: *The Task Group recommends that the Deans of Medicine actively support the Task Group in creating partnerships with various national organizations, particularly those that are mutually supportive of the goals of the AFMC and the relevant agencies.*

At the local level, each Faculty of Medicine should develop partnerships with local public health agencies to tap into the expertise available in these settings. In addition, these agencies can form the basis of community-based teaching units for training both undergraduate and post-graduate students.

Recommendation 10: *At the provincial and regional level, the Task Group recommends that each Faculty of Medicine develop local partnerships that will further their educational, research and service mandates relative to public health.*

Advocating for Enhanced Funding for Public Health Research, Teaching and Human Resources

PHAC and the Institute of Population and Public Health of the Canadian Institutes of Health Research are potential sources of funding for education and training and for research respectively. PHAC conducts training programs in field epidemiology and is addressing the evolving development of schools of public health in Canada. Currently public health capacity is being assessed nationally and many universities that do not have Faculties of Medicine are opening up programs in public health such as masters of public health degrees. Hence the area of training in public health is broadening. The AFMC Task Group believes that the Deans need to be aware of these developments and have a vision for their role relative to these other programs.

AFMC and the Deans of Medicine should advocate for increased funding for research, including research in public health human resource planning and how to increase recruitment into community medicine. To that end, increased funding for education and training and for remuneration in these areas are essential.

At the Faculty of Medicine level, a systematic review of remuneration and support structures for teachers of public health would be a welcome first step to an enhanced recruitment and retention program for faculty with skills in public health.

Recommendation 11: *The Task Group recommends that the Deans of Medicine advocate for increased funding for public health research, including research in health human resource planning, and how to increase recruitment into community medicine.*

Exploring Linkages for Inter-Disciplinary Studying and Networking

Public health is truly interdisciplinary in its approach. At the same time as Faculties of Medicine are trying to enhance their educational programs, other disciplines such as nursing are doing the same thing. The Task Group believes that there are opportunities to learn from each other, work collaboratively, and possibly introduce new and innovative curriculum models. The Task Group feels that these options should be explored. To that end, a representative from the Canadian Association of Schools of Nursing (CASN) has recently joined the Task Group.

Recommendation 12: *The Task Group recommends that the Deans of Medicine support the Task Group as they explore potential interdisciplinary sources of collaboration in the teaching of public health with organizations such as the Canadian Association of Schools of Nursing (CASN). Such programs may become models for interdisciplinary education.*

Linking to Other Activities under the Social Accountability Initiative of AFMC

Other projects within the social accountability framework target specific groups in the population, whereas implementation of this vision would provide a broad perspective on the health of the population at large. It also addresses the mandate of the Faculties of Medicine in meeting the needs of the community. The Francophone Minorities Project, the Educating Future Physicians in Palliative and End-of-Life Care and the Aboriginal Health Task Group are examples of projects addressing specific needs. Public health concepts are complementary to other projects such as the work of the Professionalism Working Group and the

Faculty Development Program for Teachers of International Medical Graduates. The development of a network of continuing professional development experts under the Continuing Professional Development and Issues of Quality (CPDiQ) project could be the conduit to the practicing physician. The outcome of the work of the Public Health Task Group will be reported back to the Partners' Forum for Social Accountability of Medical Schools, which was the impetus for developing partnerships between policy makers, health managers/administrators, academic institutions, communities and health professional organizations and under whose direction the Task Group was established. This should generate collaborative action in enhancing the approach of the profession to addressing the health of the population of Canada.

The Task Group plans to collaborate and share their findings with the other AFMC committees and projects so as to encourage the creation of a coherent overall approach to social accountability.

CONCLUSION

The current status of public health teaching in Faculties of Medicine needs urgent attention. A number of recommended strategies have been described for the consideration of the Deans of Medicine. Some of these strategies could be implemented in the short term with the understanding that the expected results may take a longer period of time to come about. The Task Group is eager to continue to work to improve the situation and looks forward to a response from the Deans of Medicine.

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APPENDIX 1

ASSOCIATION OF FACULTIES OF MEDICINE OF CANADA
SOCIAL ACCOUNTABILITY OF MEDICAL SCHOOLS INITIATIVE

Public Health Task Group

RECOMMENDATIONS TO THE COUNCIL OF DEANS OF MEDICAL SCHOOLS CONCERNING SOCIAL ACCOUNTABILITY AND POPULATION/PUBLIC HEALTH

Accepted and Endorsed in Principle
May 1 2005

I. BACKGROUND

The World Health Organization has defined the social accountability of medical schools as

the obligation to direct their education, research and service activities towards addressing the priority health concerns of the community, region, and/or nation they have a mandate to serve. The priority health concerns are to be identified jointly by governments, health care organizations, health professionals and the public.¹

Over the past five years, the Association of Faculties of Medicine of Canada (AFMC) has demonstrated its commitment to social accountability by: 1) collaborating on the development of a vision paper, *Social Accountability: A Vision for Canadian Medical Schools*; 2) forming a working group on social accountability; 3) hosting a Partner's Forum; and 4) establishing a Steering Committee and three task groups – an Aboriginal Health Task Group, a Public Health Task Group and a Young Leaders Vision 2025 Group. AFMC remains committed to supporting the efforts of Canadian faculties of health sciences and medicine to respond to community needs and priorities.²

II. PUBLIC HEALTH TASK GROUP PURPOSE AND DEFINITIONS

The Public Health Task Group met on February 23-24 and held six teleconferences between December 2004 and April 2005. (Appendix A contains a list of members). The purpose of the Public Health Task Group was to

make recommendations to the Steering Committee, Social Accountability Initiative, for consideration by the AFMC Council of Deans concerning what faculties of medicine can do to improve the delivery of essential public health services and other activities to enhance the public's health, through education, research, service and the translation of knowledge into practice.

¹ World Health Organization, Department of Human Resources in Health, *Defining and Measuring the Social Accountability of Medical Schools*, 1995, Geneva, Switzerland.

² For more information on AFMC's Social Accountability Initiative, visit www.afmc.ca.

The Task Group used the following definition of public health, taken from *A Dictionary of Epidemiology*, 4th edition, by John Last. Public health is

the combination of sciences, skills and beliefs that is directed to the maintenance and improvement of the health of all the people through collective or social actions. The programs, services and institutions involved emphasize the prevention of disease and the health needs of the population as a whole.³

The five main functions of public health are:

- population health assessment;
- health surveillance;
- health promotion;
- disease prevention; and
- health protection.

Population health is defined as

an approach to health that aims to improve the health of the entire population and to reduce health inequities among population groups. In order to reach these objectives, it looks at and acts upon the broad range of factors and conditions that have a strong influence on our health.⁴

III. INTRODUCTION TO THE RECOMMENDATIONS

The field of population/public health is evolving rapidly, as a result in part of recent episodes of communicable disease, bio-terrorism and environmental health threats; the development of the Public Health Agency of Canada and the appointment of Canada's first Chief Public Health Officer; and growing public engagement in health promotion and disease prevention. Canadian faculties of health sciences and medicine are key stakeholders in this change process, as well as critical leaders in the preparation of future physicians and graduate-level public health professionals.

In its deliberations, the Public Health Task Group considered a wide range of issues and needs related to education in population/public health, for example, the need to:

- raise the profile of population/public health in post-secondary education and within healthcare institutions, as well as among the general public, health sciences students and health professionals;
- develop better linkages among communities, public health services and academia;
- determine effective models and structures for public health graduate education (i.e., schools of public health and Master's of Public Health programs); and
- better understand career paths, demand for and the required competencies of public health professionals at the undergraduate and post-graduate levels (i. e, in family medicine and community medicine, as well as other professional fields of study).

³ John Last (ed.), *A Dictionary of Epidemiology*, 4th edition, Oxford University Press, New York, 2001, p.145.

⁴ Public Health Agency of Canada, *What is the Population Health Approach?*, Ottawa, 2002.
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The Public Health Task Group recognizes that there are significant issues related to health human resources planning, specialty education and population/public health faculty development. These should be addressed over the long-term. In the short-term, the Task Group chose to focus on:

- raising the profile of population/public health in medical education; and
- enhancing undergraduate medical education experience and competencies.

The underlying tenet for the recommendations that follow is that:

All physicians in Canada should have a thorough understanding of population/ public health, and be able to apply this knowledge to individual patients and to their practice populations.

IV. PUBLIC HEALTH IDENTITY AND ENGAGEMENT

Population/public health is faced with an “identity crisis” – experiencing high public expectations in the event of a crisis or disaster, but being relatively invisible in day-to-day life. Similarly, Community Medicine is seen as a low status, low paying specialty among medical students, who lack prominent role models and clearly defined career paths as specialists in population or community health. Medical students also often favour “hard” clinical knowledge over “soft” health promotion/disease prevention knowledge and skills. Population/public health education requires revitalization in order to meet the challenges of the future.

Recommendation 1: In order to better address population/public health in medical education, medical schools should:

- a. communicate the importance of population/public health knowledge and approaches to students, faculty and the community at large;
- b. promote Community Medicine, non-thesis Master’s and PhD degrees in population/public health-related areas as viable and rewarding career choices;
- c. undertake faculty recruitment and development to increase knowledge of population/ public health;
- d. engage communities in meaningful ways in the development and oversight of medical education so that population health needs are reflected in student selection, curriculum content, research priorities and community service;
- e. develop relationships and community capacity in order to provide high-quality student placements, community-based participatory research experiences, internships and residencies in community health settings; and
- f. work with health professionals, managers and policy makers to ensure there are positive role models and career paths for students to emulate and pursue.

V. UNDERGRADUATE MEDICAL EDUCATION – OBJECTIVES AND COMPETENCIES

Current approaches to population/public health undergraduate medical education vary considerably from school to school. For example, our recent survey of medical schools⁵ indicates that teaching hours range from 30 to 90, using different combinations of dedicated and integrated curriculum. While population/public health is addressed in written examinations, only two schools out of nine reported that students are evaluated specifically on this topic using Objective Structured Clinical Examination (OSCE) stations. Very few schools have any formal links to local public health units providing for student placements.

The Public Health Task Group agrees on the importance of enhancing undergraduate medical education related to population/public health. Emphasis should be on providing more in-depth knowledge of population health (and its integration into practice) and decision-making. Canada, of course, is not alone in this regard as other countries such as the U.S. are currently actively pursuing this direction.

Recommendation 2: Medical schools should refresh undergraduate education related to population/public health, through development and implementation of:

- a. a dedicated curriculum unit on population health, in addition to integration of population/public health content in all courses;
- b. curriculum that addresses broad determinants of health, health promotion and disease prevention at the individual (clinical), community and population levels;
- c. multidisciplinary and team teaching approaches; and
- d. cross-disciplinary and interdisciplinary learning experiences.

Recommendation 3: Medical schools should utilize *Population Health Learning Objectives for Undergraduate Medical Education* in the development of population/public health curriculum. (Appendix B)

Recommendation 4: AFMC should work with the Medical Council of Canada to encourage adoption of the learning objectives described in *Population Health Learning Objectives for Undergraduate Medical Education*.

Recommendation 5: AFMC should further explore the use of accreditation standards for undergraduate medical education and public health graduate programs to enhance education related to population/public health.

VII. PUBLIC HEALTH HUMAN RESOURCES – GRADUATE AND POST-GRADUATE EDUCATION

Faculties of health sciences and medicine are central to the education of public health professionals in Canada, including:

- family medicine specialists;
- community medicine specialists (both matched and re-entry positions);
- all MSc and PhD graduates in public health, community health, etc.; and
- many of the graduates of Master's of Public Health programs.

⁵ Medical schools were surveyed by e-mail questionnaire in April 2005. Nine of 17 schools responded.

Hence, medical schools are key stakeholders and sources of expertise in policy and program development related to population/public health. Therefore, Deans of Medicine, represented collectively by the Association of Faculties of Medicine of Canada, should play a role in key national efforts such as:

- development of national public health goals, a national public health human resources strategy and public health workforce core competencies by the Public Health Agency of Canada;
- changes to examination, certification and licensing of public health professionals, such as incorporating population and public health competencies into each core training stream of the Royal College of Physicians and Surgeons of Canada and the College of Family Physicians of Canada; and undergraduate learning objectives of the Medical Council of Canada; and
- research related to workforce characteristics, qualifications, demand and supply of various public health professionals.

Recommendation 6: Medical schools should provide feedback to the AFMC Public Health Task Group concerning their priorities related to public health human resources and other possible areas such as graduate studies and postgraduate medical education.

Recommendation 7: AFMC, at its discretion, should support the Public Health Task Group until December 2005 in order to further investigate and respond to issues related to public health human resources.

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Appendix B – Population Health Learning Objectives for Undergraduate Medical Education⁶

Preamble

The Association of Faculties of Medicine of Canada (AFMC) has been focusing on the theme of the social accountability of medical schools by encouraging a broad understanding of the expectations of society and strategies to meet them. Over the past five years the AFMC has collaborated on the development of a vision paper, *Social Accountability: A Vision for Canadian Medical Schools*; formed a working group on social accountability; held a Partner's Forum; and established a Steering Committee and three task groups – a Public Health Task Group, an Aboriginal Health Task Group and a Young Leaders Vision 2025 Group.⁷

The Public Health Task Group created these population health learning objectives for undergraduate medical education as a part of its mandate to develop “recommendations concerning what faculties of medicine can do to improve the delivery of essential public health services and other activities to enhance the public's health, through education, research, service and the translation of knowledge into practice.”

Rationale

Historically, the major advancements in the health of the public have come from interventions at the population level. As documented by McKeown (1979), the fall of mortality from tuberculosis preceded the development of effective antibiotics. Improvements in nutrition and housing are commonly viewed as the major causes of this health gain. Publications by the World Health Organization (1986;1997) speak to the importance of the determinants of health. Recent studies of cardiovascular mortality in Ontario (Alter et al., 1999) confirm the importance of non-medical determinants of health and the need to act at a population level.

Over the last few decades, more and more services are being transferred to the community. The rise of home care programs, closing of both regular hospital beds and those for specialty care, such as Tuberculosis and mental health, have placed more emphasis on community-based care. Practicing physicians are expected to work with community agencies and must take a broader perspective of health in order to meet the current needs of their patients. The emphasis on “community-oriented primary care” is a direct attempt to apply population health principles to community-based practice of medicine (Sackett et al., 2000). Hence, physicians need to have a firm understanding of population health in order to practice medicine in Canada.

Population Health Learning Objectives

These five learning objectives are presented as a guideline for the development of undergraduate medical curriculum. The focus on population health interventions at both the clinical and community level is not intended to detract from the importance of health promotion and disease prevention at the patient level.

⁶ The Public Health Task Group gratefully acknowledges the use of an original draft of Population Health Learning Objectives developed by Dr. Ian Johnson, Department of Public Health Sciences, University of Toronto.

⁷ For more information on AFMC's Social Accountability Initiative, visit www.afmc.ca.

POPULATION HEALTH 01 – CONCEPTS OF HEALTH AND ITS DETERMINANTS

RATIONALE:

Concepts of health, illness, disease and the socially defined roles of sickness are fundamental to understanding the health of a community and to applying that knowledge to the patients that a physician serves. The physician must understand and apply these concepts in order to understand health and illness behaviour.

TERMINAL OBJECTIVES:

- Define and discuss the concepts of health, illness, disease and socially defined concept of sickness.
- Understand and be able to explain concepts of determinants of health and how they affect the health of a population.
- Apply the principles of epidemiology to common office and community health situations.

ENABLING OBJECTIVES:

- As defined by Health Canada and the World Health Organization:
 - discuss the definitions of health;
 - describe the determinants of health. These include:
 - Social environment – income, education and social support
 - Physical environment – housing, working conditions, peace and security
 - Biologic and behavioural factors – smoking, diet, exercise
 - Genetic factors
 - Equity of access and special needs of certain populations;
 - explain how factors such as geographic location, gender, and ethnic origin influence some of the determinants of health, and explain how health status is in turn influenced by differential allocation and distribution of some of the determinants of health; and
 - explain the possible mechanisms by which determinants influence health status.
- Discuss the concept of natural history of disease particularly with respect to possible clinical interventions.
- Describe the concept of illness behaviour and its influence on access to health care and adherence to recommendations.
- Discuss the implications of culture on health, particularly as related to definitions of health and appropriate health practices.

**POPULATION HEALTH 02 – ASSESSING AND MEASURING HEALTH STATUS
AT THE POPULATION LEVEL**

RATIONALE:

Knowing the health status of the population allows for better planning and evaluation of health programs and tailoring medical treatments to meet patient/community needs. Physicians also are active participants in disease surveillance programs.

TERMINAL OBJECTIVES:

- Using a broad definition of health, describe the health status of a defined population.
- Discuss the factors that affect the health status of a population with respect to the principles of causation.

ENABLING OBJECTIVES:

- Interpret the health status of a defined population by:
 - calculating and interpreting rates of disease as they pertain to clinical practice
 - describing and interpreting the demographic profile, birth rates, mortality rates, and rates of common infectious diseases; and
 - evaluating clinical and epidemiological data by interpreting simple statistical test results.
- Explain the importance of accurately coding and recording health information into databases that are used to monitor the health of the population.
- Demonstrate an ability to use practice-based health information systems so as to monitor the health of their patients and identify unmet health needs.
- Describe the concepts of incidence, prevalence, attack rates, case fatality rates and the principles of standardization.
- Apply the principles of epidemiology by accurately discussing the implications of different graphical presentations of data.
- Discuss different measures of association including relative risk, odds ratios, attributable risk and statistical associations.
- Describe the principles of causation including the criteria for assessing causation.
- Be aware of important sources of population-level health data and recognise the advantages and disadvantages of each of them.
- Demonstrate an ability to evaluate research findings with particular reference to the following elements:
 - characteristics of study designs (RCT, cohort, case control, cross sectional);
 - measurement (bias, error, reliability, distributions, measurement, terminology), measures of central tendency, validity, sensitivity, specificity, positive predictive value, negative predictive value, measures of health and disease (incidence rates, prevalence rates, odds ratios, relative risk and attributable risk); and
 - sampling.

POPULATION HEALTH 03 – INTERVENTIONS AT THE POPULATION LEVEL

RATIONALE:

Many interventions at the individual level must be supported by actions at the community level. Physicians will be requested to comment on community wide interventions or to address issues that occur to many patients across their practice. Hence knowledge and skill in health promotion and diseases prevention measures are important.

TERMINAL OBJECTIVES:

- Understand the three levels of prevention (primary, secondary and tertiary).
- Be familiar with strategies for community needs assessments, health education, community engagement and health promotion.
- Appreciate the role that physicians can play in promoting health and preventing diseases at the individual and community level (e.g. prevention of low birth weight, immunization, obesity prevention, smoking cessation, cancer screening, etc.).

ENABLING OBJECTIVES:

- Be able to both define the concept of primary, secondary, and tertiary prevention at the individual (clinical) and population levels, as well as formulate preventive measures into their clinical management strategies.
- Describe the advantages and disadvantages of identifying and treating individuals versus population-level approaches to prevention.
- Name and describe the common methods of health protection (such as agent-host- environment approach for communicable diseases, and source-path-receiver approach for occupational/environmental health).
- Describe the importance and impact of good, culturally-appropriate communication with the patient, the patient's family and, if necessary, the community as a whole with regard to risk factors and their modification.
- Demonstrate an ability to apply the principles of screening and be able to evaluate the utility of a proposed screening intervention.
- Describe the five strategies of health promotion as defined in the Ottawa Charter and apply them to relevant situations.
- Evaluate one or more models of behaviour change, including predisposing, enabling and re-enforcing factors.
- Identify the potential community social, physical and environmental factors that might promote a healthy lifestyle, as well as ways to assist communities in addressing these factors.
- Identify ethical issues with the restraining of individual freedoms and rights for the benefit of the population as a whole (e.g., issues in designating non-smoking or restricting movements of person with active tuberculosis).

**POPULATION HEALTH 04 – ADMINISTRATION OF EFFECTIVE
HEALTH PROGRAMS AT THE POPULATION LEVEL**

RATIONALE:

Knowing the organization of the healthcare and public health systems in Canada as well as how to determine the most cost-effective interventions are becoming key elements of clinical practice. Physicians also must work well in multidisciplinary teams within the current system in order to achieve the maximum health benefit for all patients and residents.

TERMINAL OBJECTIVES:

- Know and understand the pertinent history, structure and operations of the Canadian health care system.
- Be familiar with economic evaluation such as cost-benefit/cost effectiveness analyses as well as issues involved with resource allocation.

ENABLING OBJECTIVES:

- Describe at a basic level:
 - methods of regulation of the health professions and health care institutions;
 - supply, distribution and projections of health human resources;
 - health resource allocation;
 - organization of the Public Health system; and
 - role of complementary delivery systems such as voluntary organizations and community health centres.
- Describe the role of other health care providers and demonstrate how to work effectively with them.
- Outline the principles of and approaches to cost containment and economic evaluation.
- Describe the main functions of public health related to population health assessment, health surveillance, disease and injury prevention, health promotion and health protection.
- Demonstrate an understanding of ethical issues involved in resource allocation.
- Define the concepts of efficacy, effectiveness, efficiency, coverage and compliance and discuss their relationship to the overall effectiveness of a population health program.

POPULATION HEALTH 05 – OUTBREAK MANAGEMENT

RATIONALE:

Physicians are important participants in the control of outbreaks. They must be able to diagnose cases, recognize outbreaks, report these to public health authorities and work with authorities to limit the spread of the outbreak. A common example includes physicians working in nursing homes and being asked to assist in the control of an outbreak of influenza or diarrhea.

TERMINAL OBJECTIVES:

- Be knowledgeable about the characteristics that define an outbreak and how to recognize one when it occurs.
- Demonstrate essential skills involved in controlling an outbreak and its impact on the public, in collaboration with public health authorities as appropriate.

ENABLING OBJECTIVES:

- Define an outbreak in terms of an excessive number of cases beyond that usually expected .
- Describe and understand the main steps in outbreak control and management.
- Demonstrate skills in effective outbreak management including infection control when the outbreak is due to an infectious agent.
- Demonstrate effectively communication skills with patients and the community as a whole.

Draft for Discussion – April 2006

APPENDIX 2

ESSENTIAL ROLES AND DRAFT KEY COMPETENCIES IN PUBLIC HEALTH FOR PHYSICIANS GRADUATING FROM MEDICINE

Prepared by:

The Public Health Task Group
Association of Faculties of Medicine

PREAMBLE

The Canadian College of Family Physicians (CFPC) defines four principles of family medicine. These are that a physician is a skilled clinician, responsible for a defined practice population, the doctor patient relationship is central to the physician's role and the physician's practice is community-based. These latter two principles indicate the strong community focus and importance of a public health approach.⁸ While these principles have been mainly applied to Family Medicine, the Public Health Task Group believes that these principles also apply to all physicians and graduating medical students.

The Royal College of Physicians and Surgeons of Canada (RCPSC) has defined seven overarching CanMEDS roles for physicians. These roles are based on the work by the Educating Future Physicians of Ontario study and are used to define the major sets of roles that physicians must assume. The CanMEDS framework is being used in this document as the framework for grouping the public health objectives.

PUBLIC HEALTH COMPETENCIES

Medical Expert

Graduates must have relevant understanding of the concepts of: a definition of health; determinants of health; epidemiology; health promotion theory and practice; and health protection theory and practice. They must be able to apply these concepts at the level of individual patients as well as at the level of the population.

⁸ The terms public health, population health and community health are commonly used in medical education. While these distinctions are important for graduate and post-graduate training, the differentiation at the undergraduate level is less important. Hence the term public health is substituted for community health in this setting.

In details, the graduate must be able to:

- Effectively assess the health needs of a patient that includes: the concepts of health, illness and disease; the determinants of health; illness behaviour; and impact of culture on health. The assessment also accounts for these factors in the patient assessment and treatment plan.
- Develop and implement strategies for addressing the health needs of individual patients through primary, secondary and tertiary prevention that involves both active and passive modalities.
- Develop and implement health promotion strategies for addressing the health needs of individual patients.
- Use viable methods for monitoring the effectiveness of preventive health and health promotion strategies using quality improvement methodologies.
- Effectively assess the needs of a population that respects: the concept of the determinants of health; epidemiological principles; sources of health information; and the impact of culture.
- Obtain and interpret simple population-based health statistics from both clinical settings (practice-based health record systems) and public sources (Statistics Canada, Health Canada, Canadian Institute for Health Information) for population health planning.
- Identify strategies for addressing the health needs of populations through primary prevention including such interventions as immunization and hazard identification.
- Identify strategies for addressing health needs of populations through secondary prevention including assessing the suitability for conducting screening programs and importance of case-finding and implement those relevant to his/her practice.
- Develop and implement health promotion strategies for addressing the health needs of his/her practice population.
- Be able to assess the appropriateness and effectiveness of use community-based agencies (e.g., Canadian Cancer Society, Home Care, Meals on Wheels, Alcoholics Anonymous, etc.) to assist with the delivery of both individually-based and practice population-based intervention programs.
- Evaluate the effectiveness of preventive health and health promotion strategies using appropriate frameworks.
- Understand and be able to assist with the detection of epidemics and the control of infectious and environmental illnesses in the population.
- Understand the role of public health agencies and be able to work effectively with public health officials in routine and emergency situations.
- Understand the principles of evaluation of new technologies in order to interpret the findings of such evaluations.
- Using principles of economic evaluation and ethics, understand the selection of appropriate medical investigations and interventions.

Communicator

Graduates must have relevant knowledge and skills to communicate epidemiological and public health concepts to individual patients and groups/communities.

In details, the graduate must be able to:

- Effectively communicate in a culturally-appropriate manner with the patient, the patient's family and, if necessary, the community as a whole with regard to matters related to health, risk factors and their modification, as well as therapeutic interventions.
- Demonstrate effective communication skills with patients and the community as a whole, particularly in an outbreak or crisis situation.
- Communicate with other professionals in a manner appropriate to their roles in the health care system in order to facilitate optimal care of the patient.

Collaborator

Graduates must have knowledge of and be able to work collaboratively within a health team and with community-based agencies.

In details, the graduate must be able to:

- Describe the role of the different health care providers including primary and specialist physicians, other health care professionals and social service workers.
- Demonstrate an ability to participate effectively and appropriately in an inter-professional health care team.
- Effectively work with other health professionals to prevent, negotiate and resolve inter-professional conflict.
- Demonstrate effective collaboration with community based health agencies.
- Describe how governance and organization of health care influences patient care.

Manager

Graduates must have a basic knowledge of how to manage patient care and administer their practice. The graduates must understand their role as gate-keepers for society. This is distinct from their other role as advocate for their patients and/or a community.

In details, the graduate must be able to:

- Outline and apply the principles of and approaches to cost containment and economic evaluation to common clinical situations, particularly from the perspective of the physician as a gate-keeper for society.
- Define the concepts of efficacy, effectiveness, efficiency, coverage and compliance and discuss their relationship to the overall effectiveness of a population health program.
- Describe the main steps in control and management of infectious and environmental illness. Apply those relevant to their practice population.

- Demonstrate an ability to use practice-based health information systems so as to monitor the health of their patients and identify unmet health needs.

Understand health care organizations and systems in order to work effectively and efficiently within them.

Health Advocate

Graduates must have knowledge of advocacy and health promotion. They also need to be able to apply these concepts at the individual and population level.

In details, the graduate must be able to:

- Describe, evaluate and use appropriately one or more models of health promotion such as those defined in the *Ottawa Charter for Health Promotion*.
- Evaluate one or more models of behaviour change, including predisposing, enabling and re-enforcing factors.
- Identify the potential community social, physical and environmental factors that might promote a healthy lifestyle, as well as ways to assist individuals and communities in addressing these factors and describe how these factors should influence practice behaviour.
- Advocate for change on behalf of an individual patient and/or disadvantaged community of patients.

Scholar

Graduates must have a solid understanding of the principles of research and evidence. They must be able to apply these concepts to simple clinical situations and at the population level.

In details, the graduate must be able to:

- Demonstrate an ability to evaluate research findings with particular reference to the following elements:
 - characteristics of study designs (RCT, cohort, case control, cross sectional), and
 - measurement (bias, error, reliability, distributions, measurement, terminology), measures of central tendency, validity, sensitivity, specificity, positive predictive value, negative predictive value, measures of health and disease (incidence rates, prevalence rates, odds ratios, relative risk and attributable risk); and sampling.
- Demonstrate an ability to communicate research findings to colleagues, patients, and the community as a whole.
- Apply simple research methods for the purpose of quality improvement as these arise during the practice of medicine.
- Retrieve information necessary to maintain expertise.

Professional

Graduates must act in a professional manner that respects the concepts of altruism, duty, excellence, integrity and respect. They must also demonstrate an understanding of the application of ethical principles to individual and public health issues.

In details, the graduate must be able to:

- Describe and apply the ethical principles with regards to resource allocation of scarce health resources.
- Conduct themselves in a manner that demonstrates knowledge and understanding of professional and ethical codes of conduct.
- Describe and discuss the concepts of individual rights versus public well-being and how such concepts can make public health decisions challenging.