

Executive Summary

The National Executive Council (NEC) of the Canadian Institute of Public Health Inspectors recognizes the necessity to establish ongoing continuing education requirements and the further need to develop standards of practice within the profession. In 1989, the NEC undertook to fund a research project entitled “Study of the Future Role of Public Health Inspectors.”¹ The study reached the conclusion that... “It is not reasonable to believe that the current range of PHI functions should continue. To be a jack of all trades in today’s world of specialization and increasing technical complexity will almost surely lead to a decreasing use of PHIs. Areas of competence need to be restricted and skills in this more limited occupational spectrum need to be upgraded.”² Suffice to say, this sparked considerable debate within the professional community. Some fifteen years ago the “Fulton/Sutherland Report” recognized the necessity and emergence of a competency driven educational process, however the deliberations surrounding the report negated the commitment to a strategic action plan to address the identified issues.

To begin the core competency developmental process, first a literature review was conducted to understand and comprehend the various process and component architecture encompassing the development of core competencies, then to further assess the current core competencies that presently exist within the international environmental health community and allied professions in Canada as well as the global landscape and then finally to begin the task of determining the appropriate core competencies necessary to enhance and sustain the public health infrastructure. In addition, this review examined both aspects of core functions and competencies with a purview to determine where public health inspectors and environmental health officers fit into the Canadian public health continuum.

Although no official designation of core function components currently exists within the present public health framework in Canada, there is general agreement and consensus on five specific core functions. The Advisory Committee on Population Health (ACPH)³ has articulated these core functions as follows:

- ❖ Disease and Injury Prevention
- ❖ Health Promotion
- ❖ Health Protection
- ❖ Health Surveillance
- ❖ Population Health Assessment

Considerable debate presently revolves around the placement of Emergency Preparedness as either an independent core function or one that resides within the mutually agreed upon aforementioned components. From a purely macro economic perspective, placing Emergency Preparedness under the umbrella of any of the main five core functions could clearly restrict or impair funding for this program and could further capitate already existing allocated funds. If constituents are to be committed to developing Emergency Preparedness within the Canadian public health landscape, then Emergency Preparedness should reside as a sixth independent core function in order to achieve the necessary funding and commitment to advance this emerging and

¹ Study of the Future Role of Public Health Inspectors in Canada. Research Coordinators: Dr. Jane Fulton and Dr. Ralph Sutherland. Faculty of Administration, University of Ottawa. June 1989.

² Study of the Future Role of Public Health Inspectors in Canada. Research Coordinators: Dr. Jane Fulton and Dr. Ralph Sutherland. Faculty of Administration, University of Ottawa. June 1989. Executive Summary, page 2.

³ Advisory Committee on Population Health Highlights Report. 2001. pages 21-25

essential program. Failing to recognize the opportunity costs associate with not placing Emergency Preparedness as a sixth core competencies would further hinder the public health infrastructure.

Many other countries, governmental agencies and professional associations have reached similar conclusions and have either developed or are proactively creating a strategic framework that is underpinned by skills, knowledge and abilities that will safeguard the health of the public and sustain public health programs into the future.

In New Zealand⁴ for example, the five proposed core competencies for public health are:

- ❖ Applied Epidemiology
- ❖ Applied Health Risk Analysis and Management
- ❖ Health Surveillance
- ❖ Programme Management
- ❖ Public Communication

The core competencies as used in New Zealand are designed to achieve the best health gain, which is similar to what core functions, essential public health services and essential public health programs are designed to do. Although the terminology is different within the New Zealand framework, it seems apparent that these programs are core functions which are designed to help... “create a common language for the health sectors and to develop within the health system the capability to pass to the community itself the information and tools required to modify the emerging risk factors associated technical urban societies.”⁵

In the United States,⁶ a somewhat different approach to core function identification has been adopted. Ten essential public health programs have been determined as fundamental to U.S. public health as follows:

- ❖ Monitor health status to identify community health problems
- ❖ Diagnose and investigate health problems and health hazards in the community
- ❖ Inform, educate, and empower people about health issues
- ❖ Mobilize community partnerships to identify and solve problems
- ❖ Develop policies and plans that support individual and community health efforts
- ❖ Enforce laws and regulations that protect health and ensure safety
- ❖ Link people to needed personal health services and assure the provision of health care when otherwise available
- ❖ Assure a competent public health and personal health care workforce
- ❖ Evaluate effectiveness, accessibility, and quality of personal and population-based health services
- ❖ Research for new insights and innovative solutions to health problems

The Center for Disease Control and Prevention recognizes some inequities within the U.S. public health framework, whereas ... the public health workforce – no matter how dedicated its workers might be – is unevenly trained in the basic tenets of public health.”⁷ “CDC has a leadership responsibility to provide its partners with the skills and resources necessary to effectively

⁴ Health Care and Informatics Review Online. Nurturing Infectious Ideas. Page 2.

⁵ Health Care and Informatics Review Online. Nurturing Infectious Ideas. Page 2.

⁶ Public Health Support Workgroup Report. Executive Summary. September 1, 1999. Pages 6/7.

⁷ CDC/ATSDR’s Plan For Public Health Workforce Development. Page 16.

translate public health science into public health practice”⁸ “The CDC has a unique role in closing the gap between current public health workforce competencies and the skills needed to perform essential public health services. CDC leadership in developing the public health infrastructure is already well recognized.”⁹ The Skills Enhancement Program, Centre for Surveillance Coordination, Population & Public Health Branch, Health Canada has undertaken a similar leadership role in Canada in building core competencies within the public health workforce.

Although the Canadian public health workforce is better trained and educated compared to its American counterparts, we are still not where we need to be to enhance the safety net and protect the health of all Canadians. The Standing Senate Committee on Social Affairs, Science and Technology, Chaired by Senator Michael Kirby in their Final Report on The Health of Canadians: The Federal Role¹⁰ concluded that there is an urgent need for a national strategy to enhance the public health infrastructure... “such a strategy cannot be a “federal” one but rather involve all stakeholders, bearing in mind that the training and education of health care professionals is a provincial responsibility. For Canada to attain the objective of self-sufficiency in health human resources, long-term cooperation and coordination among all stakeholders in the health care field are necessary”¹¹

The recent waterborne disease outbreaks in Walkerton, Ontario (2000) and in North Battleford, Saskatchewan (2001); West Nile virus infections in the central and western parts of Canada (2002/2003) and the SARS novel coronavirus epidemic mainly in the Greater Toronto and Vancouver areas (2003) in this country, identified many deficiencies in our response network. SARS especially emphasized ... “lack of surge capacity in the clinical and public health systems; difficulties with timely access to laboratory testing and results; absence of protocols for data ownership; inadequate capacity for epidemiological investigations of the outbreak; lack of coordinated business processes across institutions and jurisdictions for outbreak management and emergency response; inadequacies in institutional outbreak management protocols, infection control, and infectious disease surveillance; and weak links between public health and the personal health services system, including primary care, institutions and home care.”¹²

The Canadian Institute of Public Health Inspectors after further deliberations and reflections supports the Skills Enhancement Program, Centre for Surveillance Coordination, Population & Public Health Branch, Health Canada proposal for the establishment of core competencies for **all** practitioners within the public health service delivery framework in Canada, including public health inspectors and environmental health officers. Public Health Protection, also known as Environmental Health in various circles is a key component of public health and is recognized as a core function within the public health framework.

The literature review has also identified various key definitions, including environmental health practitioners and core competencies within the public health framework; plus some basic assumptions respecting the technical qualifications and competency; and the basic traits and

⁸ CDC/ATSDR’s Plan For Public Health Workforce Development. Page 19.

⁹ CDC/ATSDR’s Plan For Public Health Workforce Development. Page 19.

¹⁰ Standing Committee on Social Affairs, Science and Technology. The Health Of Canadians: The Federal Role – Final Report. Volume Six: Recommendations for Reform. 2002.

¹¹ Standing Committee on Social Affairs, Science and Technology. The Health Of Canadians: The Federal Role – Final Report. Volume Six: Recommendations for Reform. 2002.

¹² Health Canada – Learning from SARS Executive Summary. Page 2.

characteristics of an effective environmental health practitioner¹³ which will help guide the CIPHI Core Competencies Steering Committee. The various major barriers to the development of a competent public health workforce have been identified, these includes: the lack of a public health workforce inventory; no defined consensus on core competencies and core curriculums; lack of an integrated delivery system for life-long learning; no uniform national competency standards; no uniform approach to evaluating the effectiveness of learning experiences; lack of an integrated learning network and training system; and a lack of financing of workforce training and continuing education.¹⁴

The task of the Core Competencies Steering Committee will be to reach consensus on the development of core competencies for public health inspectors and environmental health officers working under the core function of Health Protection. This group will need to make some determinations around Emergency Preparedness as either an independent core function or a domain under the umbrella of another core competency. This literature review is formulated to guide and assist the Core Competencies Steering Committee with their task.

The development of a core competencies framework is part of a process to provide post-certification credentialing and continuing education to public health inspectors and environmental health officers. It is also part of a process to integrate and enhance the public health infrastructure targeted at provided a better safety net for all Canadians while fostering ongoing professionalism along the public health continuum towards a more sustainable public health system.

It is important that the Canadian Institute of Public Health Inspectors continue to move towards becoming, as organizational behaviourist Peter Drucker would say, a “learning organization” in concert with other public health agencies and the various bodies of governance organizations across Canada. It is essential if the public health system is to be sustainable and is therefore more capable of providing better protection while enhancing the health of all Canadians, that we create an environment driven by learning organizations whose employees are the subsequent knowledge workers of tomorrow. The Skills Enhancement Program, Centre for Surveillance Coordination, Population & Public Health Branch, Health Canada is presently taking the aforementioned approach as part of their leadership role in developing a new framework for public health.

Introduction

The National Executive Council (NEC) of the Canadian Institute of Public Health Inspectors recognizes the need for an integrated and well trained public health workforce to sustain the public health infrastructure into the future while enhancing the safety net for all Canadians. The NEC is committed to a process that will identify core competencies for public health inspectors and environmental health officers within the core functions of the public health framework. The ultimate aim of the Core Competencies Project is to provide a strategic framework for the creation of the appropriate core competencies for public health and environmental health practitioners. This will help strengthen and enhance the public health infrastructure, while enhancing capacity and accelerating the response mechanism in order to effectively address emerging public health challenges in Canada.

¹³ Environmental Health Competency Project: Recommendations for Core Competencies for Local Environmental Health Practitioners. Page 8.

¹⁴ CDC/ATSDR’s Plan For Public Health Workforce Development. Page20.

The starting point in the development phase of creating core competencies for Health Protection professionals was a literature review, followed by the establishment of a Core Competencies Steering Committee, and then the development of business plan and supporting milestones. The Literature Review is listed as Appendix A, the Core Competencies Steering Committee is found under Appendix B, while the Business Plan and milestones are framed within Appendix C in the document.

It is important to understand that public health inspectors and environmental health officers are a critical component of the public health framework at all levels of governance and are considered to be... “the front line troops in the public health battle to prevent disease.”¹⁵ Public health inspectors and environmental health officers in Canada are some of the best trained and educated within the international environmental health community where the Certificate in Public Health Inspection is held in high esteem. Unfortunately, the skill set and dedication of many of these professionals seems to go unrecognized by colleagues in not only public health, but in allied professions and throughout the various tiers of government, although their contribution to protecting the health of all Canadians is significant.

Although no terms of reference existed for the development of the Core Competencies Steering Committee, it is self-evident that consideration must be given to a composition and matrix that is dynamic, knowledgeable and representative of health protection. This committee must be national in scope and represent the numerous stakeholders and constituents within all components and elements of public health and environmental protection governance nationally. This task force shall be inclusive and not exclusive. Consideration for the committee composition and representation shall include stakeholders from the following venues:

- ❖ all health protection programs (federal, provincial, territorial, municipal, regional,)
- ❖ national geographical representation;
- ❖ all levels of personnel - employers, management, specialists and front line staff;
- ❖ educators and academics from within the public health inspection scholastic landscape;
- ❖ representation from the Medical Health Officers community;
- ❖ membership from aligned professional organizations;
- ❖ representation from service providers to First Nations health;
- ❖ representation from the Canadian Armed Forces;
- ❖ representation from the National Executive Council, CIPHI's and,
- ❖ membership from the Board of Certification, CIPHI

Terms of Reference (TOR) should be established for the Core Competencies Steering Committee. The mandate for this committee will be defining and developing core competencies for public health inspectors and environmental health practitioners, those who hold of a Certificate of Public Health Inspection, Canada, designated as CPHI (C), as issued either by the Board of Certification (BOC), Canadian Institute of Public Health Inspectors or the Canadian Public Health Association and operate within the core function of Health Protection. These competencies are designed to complement both the learning outcomes established by the BOC for all schools of environmental health, and the examination process for the Certificate in Public Health Inspection Canada.

The development of core competencies should be targeted at those public health practitioners with a minimum of five years practical experience, as this appears to be an optimal timeline for new graduates to be knowledgeable and professionally competent. Five years after graduation is

¹⁵ Environmental Health Competency Project: Recommendations for Core Competencies for Local Environmental Health Practitioners. Page 5.

the timeframe required for a new graduate to place all those learning outcomes into practice and become skilled and within the profession. Learning should be a life-long experience.

This Core Competency Project is designed to build on existing work that has taken place within the public health scheme in Canada and internationally.

The literature review further indicates that the technical competency of the public health or environmental health practitioner is not an issue in the development and defining of core competencies. The Core Competencies Steering Committee will need to make a determination with respect to Emergency Preparedness as either an independent core function or as an umbrella component of another public health core function. The attached literature review, located at Appendix A will be of valued assistance to the Core Competencies Steering Committee in fulfilling its mandate and achieving its goals.

Environmental Scan

The National Environmental Health Association (NEHA) in the United States and the Chartered Institute of Environmental Health (CIEH) in the United Kingdom, similar organizations to the Canadian Institute of Public Health Inspectors have both embarked on comparable, yet somewhat different processes in the development of core competencies for the public health practitioner. “In January 1990, the then Institution of Environmental Health Officers introduced its Assessment of Professional Competence (APC) Scheme, as part of a continuing programme of quality assurance in professional development.”¹⁶ “The APC is an assessment of the skills which have developed during practice, and which are considered essential in enabling the technical knowledge and skills acquired during qualification to be applied in a professional manner.”¹⁷

New Zealand¹⁸ is advocating a somewhat different, yet entirely valid approach to the development of core competencies, via a value added approach to public health through the following:

- ❖ What is it public health can do?
- ❖ Where does it add value to the wider system?
- ❖ Who are its natural allies and how can it recruit them to its cause?

¹⁶ Careers & Professional Development, Assessment of Professional Competence. Chartered Institute of Environmental Health. Page 1.

¹⁷ Careers & Professional Development, Assessment of Professional Competence. Chartered Institute of Environmental Health. Page 1.

¹⁸ Health Care and Information Review Online. Nurturing Infectious Ideas, Vol 3, No. 7: Public Health and Disease Prevention – Moving forward in New Zealand and Australia. Page 1.

New Zealand recognizes that... “Public health has a set of core competencies, some historical, some new. These competencies must be explicitly recognized before they can be engaged in a strategy to bring about change. A **core competency** is something which:

- ❖ an organization (or sector) does better than others
- ❖ is hard to imitate
- ❖ applies across a whole organization and over time.

In New Zealand, five core functions for public health are advocated as indicated below:

- ❖ Applied Epidemiology
- ❖ Applied Health Risk Analysis and Management
- ❖ Health Surveillance
- ❖ Programme Management
- ❖ Public Communication

It is by leveraging core competencies that an organization adds value in its interaction with stakeholders and customers. If an organization does not know its own competencies it does not know how it can add value. A core competency covers a wide variety of knowledge and skill areas, for example, relationship management, supply line management, niche technology or niche marketing could all be core competencies.”¹⁹

Within the World Health Organization (WHO) and the Pan American Health Organization (PAHO) these core functions are generally referred to as Essential Public Health Functions (EPHF). As early as 1997, the WHO and PAHO identified nine elements with the EPHF framework. These are as follows:²⁰

- ❖ Prevention, surveillance, and the control of communicable and non-communicable disease
- ❖ Monitoring of the health situation
- ❖ Health Promotion
- ❖ Occupational Health
- ❖ Environmental protection
- ❖ Legislation and regulation in public health
- ❖ Management in public health
- ❖ Specific public health services
- ❖ Health care for vulnerable groups and high risk populations.

At a first glance, it would appear that the WHO/PAHO essential public health functions are more aligned with the essential public health services of the American Public Health Association. Upon closer examination, there is a significant difference with the two proposals. What the literature seems to articulate is that there is no one model used for defining core public health functions, essential public health functions or what is known as essential public health services for any public health service delivery framework. A one size fits all approach does not work. This matter is best addressed country by country and on a needs dependant basis. However, all models

¹⁹ Health Care and Information Review Online. Nurturing Infectious Ideas, Vol 3, No. 7: Public Health and Disease Prevention – Moving forward in New Zealand and Australia. Page 2.

²⁰ Pan American Health Organization, World Health Organization 42nd Directing Council. 52nd Session of the Regional Committee. Provisional Agenda Item 4.11, July 20, 200. Page 8.

enhance our understanding and importance of the development of core competencies within the context of sound public health practices and an approach to sustainability.

It appears that the Chartered Institute of Environmental Health has the most advanced process for the development of competency testing for public health inspectors. However, all models and processes of core competency identification and development will offer the Core Competency Steering Committee and ultimately the Canadian Institute of Public Health Inspectors, an opportunity to garner knowledge from colleagues within the same professional domain. It is envisioned that this will afford CIPHI an opportunity to shorten the learning curve in the core competency developmental process.

It is important to recognize the sponsorship, leadership role and vision of the Skills Enhancement for Health Surveillance Program, Public Health Branch, Health Canada in the articulation and development of the Core Competency Project. This project will contribute significantly to enhancing the overall Canadian public health infrastructure. The project will provide a framework for broadening the skills, abilities, traits and attributes of the public health inspector and environmental health practitioner, as we work towards increasing capacity and developing a more integrated and cohesive public health network.

The Core Competency Project is designed to further develop partnerships and networks, increase awareness, build collaboration and open communication channels at all levels of government, professional associations, the academic community and public health inspectors and environmental health practitioners. The Public Health Branch, Health Canada must ensure that the Canadian Institute of Public Health Inspectors is a stakeholder in any development process to address core functions within the Canadian public health landscape and further support the recognition and importance of this profession.

Vision without action is merely a dream. Action without vision just passes the time. Vision with action can change the world.

-Barker, 1992

Background

The new millennium has not been kind to the Canadian public health system and supporting infrastructure. Canada has been plagued with a multitude of issues these past few years. Waterborne disease outbreaks in Walkerton, Ontario and North Battleford, Saskatchewan; the SARS outbreak in Ontario and British Columbia; West Nile virus in Ontario and Western Canada and Norwalk like viruses in the cruise ship industry on the West coast are just some of the emerging issues. International travel and an ever-increasing access within the global community have proven to be a determinant in increased infectious disease transmission. It can now be said, that one does not have to leave home to get “traveler’s diarrhea” with increased access to the global marketplace. Fortunately, not all these factors have resulted in a tragic loss of life, as was the case in Walkerton and with the SAARS outbreak. The public health system’s response mechanism and ability to protect the health of all Canadians has been severely tested during these incidents.

In addition, bioterrorism in Canada has created new concerns, demands and requirements for all emergency preparedness responders along the health continuum. These emerging pathogens and incidents have dominated the public health landscape since the start of the new millennium. History has shown severe limitations and significant gaps within the public health response framework. A lack of surge capacity in the various components was obvious at many times.

What was once thought to be an excellent public health infrastructure crumbled under the onslaught of these emerging diseases. Communications among the various intergovernmental agencies and private health care provisioners was either lacking or non-directional. Suffice to say, a ripple effect echoed through not only the public health community, but throughout the House of Commons and Senate as well, with a more urgent call to reform the public health system.

Dedication alone will not protect the health of Canadians. We must do more in developing proactive and robust processes and infrastructures that will better prepare us and lessen the need for a more reactive response to further incidents.

The upward pressures on all levels of government to control escalating health care costs, combined with the tragic loss of life and the public's demand to do more to protect the health of Canadians, have forced a refocus on public health resourcing and a demand for increase funding driven by a more timely and cost effective public health system. It is time to look at old problems in new ways, which is what true leadership is all about.

Clearly, public health has to learn from these issues, as we did with SARS. It is unfortunate that there must be a loss of life before changes are made. The Health Canada report – Learning from SARS²¹ goes to the heart of the matter in discussing what is lacking and what is needed to enhance the public health framework.

The Standing Senate Committee on Social Affairs, Science and Technology led by Senator Michael Kirby²²; the report by the National Advisory Committee on SARS and public health, chaired by Dr. David Naylor²³ have strengthened the call to reform the public health system in Canada. In addition, the report by the Canadian Institute for Health Research (CIHR) further supports the need for a better and more responsive public health system.

No attempt to improve public health will succeed that does not recognize the fundamental importance of providing and maintaining every local health agency across Canada an adequate staff of highly skilled and motivated public health professionals.

Naylor Report, 2003

²¹ Health Canada - Learning From SARS. Chapter 4 – Enhancing The Public Infrastructure: A Prescription for Renewal.

²² Standing Senate Committee on Social Affairs, Science and Technology. November 2002. Also known as the Kirby Report.

²³ National Advisory Committee on SARS and Public Health. October 2003. Also known as the Naylor Report.

Decision-makers need only to look at the 1998 report entitled “Commission of Inquiry on the Blood System in Canada”²⁴ by Mr. Justice Horace Krever. It was the so called Krever Inquiry that was responsible for reforming the blood supply system in Canada, which ultimately removed the Canadian Red Cross from control of this program. During the inquiry, Justice Krever asked three questions that are fundamental to each and every decision making process, especially from an accountability and liability perspective. Justice Krever asked:

- ❖ what did you know?
- ❖ when did you know it? and,
- ❖ what did you do about it ?

Public health decision-makers should adopt this simple framework when looking at issues and ensure that they can adequately and thoroughly answer all three questions as posed by Justice Krever. If during any disease outbreak or public health emergency, if those involved can answer these three questions, then they have done what is needed to do to protect the health of those at significant risk during any event.

There is a strong need to prepare the environmental health workforce to address the complex environment of the 21st Century.

***Center or Disease Control and Prevention
and American Public Health Association***

The Canadian Institutes of Health Research - Institute of Population and Public Health publication “The Future of Public Health in Canada: Developing a Public Health System for the 21st Century”²⁵ examined many of the complex issues facing the public health system. The CIHR looked at public health systems in other countries as part of an ad hoc committee of Canadian public health leaders brought together to examine the public health system framework and make suggestions on how to better structure and more adequately provide human resource capacity to further improve and enhance the health of all of Canadians.

The findings help provide a sound framework for the examination of core functions within Canadian public health context. One of the predominant themes of the article is follows...

“Public health is focused on the health of populations. To do so effectively requires a critical mass of technically expert staff. This has implications for the size of the population base of public health agencies. Achieving the critical mass of expertise to address the breadth of public health issues has prompted the development of central resources to support the fulfillment of essential public health functions. These agencies also play a significant role in system infrastructure development including Based on the collective experience of Committee members, the results of the previous Canadian key informant survey of public health capacity, and the findings from the review of other countries' efforts to improve their public health systems, the following key infrastructure elements of a national public health system need to be achieved.”²⁶

²⁴ Commission of Inquiry on the Blood System in Canada. Mr. Justice Horace Krever, Chairman. 1998.

²⁵ The Canadian Institutes of Health Research - Institute of Population and Public Health. “The Future of Public Health in Canada: Developing a Public Health System for the 21st Century.” Website.

²⁶ The Canadian Institutes of Health Research - Institute of Population and Public Health. “The Future of Public Health in Canada: Developing a Public Health System for the 21st Century.” Website

- ❖ Clearly defined essential functions of public health;
- ❖ Defined roles and responsibilities at each level of the system (national, provincial/territorial, regional/local);
- ❖ Consistent, modern legislation within each jurisdiction across the country to support those functions, roles and responsibilities;
- ❖ Appropriate delivery structures to accomplish functions, roles, and responsibilities within each jurisdiction;
- ❖ Appropriate funding levels and mechanisms that ensure equitable availability of public health services to all Canadians;
- ❖ Appropriate numbers of well-trained staff;
- ❖ Appropriate information systems to support assessment and surveillance;
- ❖ Access to expertise and support to develop a prospective vision, carry out these responsibilities expertly and efficiently, and support innovation and evaluation;
- ❖ Accountability mechanisms at each level of the system.

These recommendations are aligned with Strategic Direction Principles, whereby the focus is Customer driven and you then Assess, Plan, Do and Verify (CAPDV) The CIHR recommendations provide an excellent framework for rebuilding the Canadian public health system and is a sound segue into the necessity for a needs assessment.

Needs Assessment

As part of examining core functions and core competencies within the public health framework, it seems appropriate to first conduct an analysis of the public health inspector and environmental health practitioner inventory. Further more, does this inventory even exist and if so, who is the gatekeeper of this particular data set? The immediate and most pressing issue would seem to be, how is it possible to enhance capacity as being suggested throughout the literature review without first ascertaining the current level of capacity and then examining where capacity is lacking within the health inspector and health officer architecture? There are further relevant questions that also need to be addressed. What about the surge capacity? Does it exist? Can it be enhanced? Is the service delivery framework for this cohort of professionals appropriate across all jurisdictions and programs? Is the information technology robust and capable of sustaining future developments within the environmental health community? Is the health information management system integrated? Is the health information management system capable of being integrated? Is there sufficient funding to address the numerous gaps presently existing within this pivotal environmental landscape? If not? When will those funds be made available and how?

Another pivotal requirement revolves around leadership. Is the appropriate leadership in place to drive environmental health programs? Are there succession plans for this leadership group? There are many more questions and answers that are needed to complete the needs assessment and supporting inventory for the public health inspector and environmental health officer component of the public health continuum.

It is also important to examine the role and participation of the said practitioner within the core functions structure. Pivotal roles of public health inspectors and environmental health officers must be properly identified within the boundary of the Health Protection function. Noteworthy is the fact that Tobacco Control and Tobacco Reduction, presently a key function for many public

health inspectors, and most likely to further increase as governments move to reduce tobacco usage, is not allocated within this domain. It should be understood, that this identification process is not intended to replace the job description within the work environment. Core services identification is essential in the development of core functions and hence competencies. What is most disconcerting for the Canadian Institute of Public Health Inspectors is that Health Protection has been defined as a core function within much of the literature addressing the public health core functions scheme.

Yet, the organization that represents the profession has not been a party to any deliberations to discuss these matters. If the health of Canadians is to be better protected via a well integrated and organized national public health framework, then it seems fundamental to the developmental process that all pertinent stakeholders be involved in the determination of core functions. The Canadian Institute of Public Health Inspectors advocates that any process for the development of national core must functions must include the necessary elements of transparency and inclusivity whereby all stakeholders along the public health continuum are involved in the process at any level.

Public health inspectors and environmental health officers clearly need to be part of an integrated decision-making framework that will reach consensus in determining the following themes:²⁷

- ❖ *what is public health?*
- ❖ *what are the core functions of public health?*
- ❖ *what does public health do?*
- ❖ *who is responsible for what?*
- ❖ *what is the accountability framework?*
- ❖ *what is the communications strategy?*
- ❖ *what is the overarching systems architecture?*

Definitions

In order for the Core Competencies Steering Committee to proceed with their mandate, it is critical that they be provided with a set of consistent definitions to guide their deliberations and discussions. Definitions are absolutely essential. When reviewing the various materials within the context of this report, it is noted that various agencies use different terminology to describe similar issues. For example, Core Functions is the terminology used by the World Health Organization (WHO). Essential Public Health Functions (EPHF) is used by the Pan American Health Organization (PAHO); while Essential Public Health Services is referenced by the American Public Health Association (APHA) and the National Environmental Health Association (NEHA). These terminologies describe the same or homologous public health aspect.

Before attempting to define core functions and core competencies, perhaps we should first step back and examine the rationale of developing these data sets. Core functions and core competencies present the public health and environmental health practitioner with a set of tools which when properly utilized, will assist the individual and the organization to which he belongs in achieving various goals and outcomes. The Ontario Public Health Association (OPHA), during

²⁷ CDC/ATSDR. Strategic Plan for Public Health Workforce Development: Towards a life-long learning system for public health practitioners. Page 7.

their strategic development core competencies, identified several general purposes associated with defining core functions and core competencies. Many of these are included below²⁸:

- ❖ increased awareness, appreciation and visibility of the public health sector
- ❖ better define and articulate what is public health
- ❖ improved communication amongst public health professionals and between the key stakeholders
- ❖ securing adequate resourcing and allocation
- ❖ unifying and strengthening the public health sector
- ❖ creating consistency across the public health continuum
- ❖ guide curriculum and content development within the educational and training centres
- ❖ assess the strengths, weaknesses, opportunities and threats of the public health workforce
- ❖ quality assurance, quality control, continuous quality improvement
- ❖ increase credibility of public health practitioners
- ❖ identify gaps in key skill areas
- ❖ increase the functionality of the public health system
- ❖ develop *learning organizations* and *knowledge workers*

It is therefore first necessary to define **core functions**. Once again, there is no standardized definition in place within the public health community. Both the World Health Organization and the Pan American Health Organization have a consistent approach to defining **core public health functions** or **essential public health functions (EPHF)**. As noted earlier, the terms core public health functions and essential public health functions are homologous. The vision of the World Health organization was to have consistency within the nomenclature of core elements. Unfortunately this has not happened and it sometimes appears that we are comparing “apples and oranges”, when we should be comparing “apples and apples”. Consistency is definitely lacking. The WHO Delphi Study in January 1997, brought together some one hundred and forty-five experts to examine Essential Public Health Functions as part of the policy of *Health for All by the Year 2000*, and it was the Delphi Study, who redefined EPHF internationally.²⁹ The intent of this gathering was to... “develop an international consensus regarding the central characteristics of these functions.”³⁰ To date, the WHO has not been successful in fulfilling their mandate.

The Pan American Health Organization further enhanced the definition of essential public health functions... “The concept of public health underlying the definition of the EPHF is that of collective action by the State or civil society to protect and improve the health of individuals. It is a notion that goes beyond population-based or community interventions and entails the responsibility of guaranteeing access and equality in health care. It approaches public health not as an academic discipline but as an interdisciplinary social practice. Public health is not synonymous with State responsibility in health, since the work in this area extends beyond the tasks proper to the state and does not encompass all that the State can do in the field of health.”³¹

²⁸ Ontario Public Health Association (OPHA) December 2003.

²⁹ Pan American Health Organization, World Health Organization. 12th Session of the Executive Committee. Provisional Agenda Item 4.10, April 27, 2000. Page 6.

³⁰ Pan American Health Organization, World Health Organization. 42nd Directing Council. 52nd Session of the Regional Committee. Provisional Agenda Item 4.11, July 20, 2000. Page 8.

³¹ Pan American Health Organization, World Health Organization 42nd Directing Council. 52nd Session of the Regional Committee. Provisional Agenda Item 4.11, July 20, 2000. Page.5

Within the Canadian public health framework, it appears that we have chosen to use the term **core functions** as the preferred terminology for our deliberations; however we will reference essential public health services as required. Core functions should be considered as the upper most hierarchy or tier in the Canadian landscape. The Nova Scotia Public Health Services has defined core functions as... “the essential elements of an effective and responsible public health system given a current social, political and economic context.”³² This definition has been further enhanced to mean:

- ❖ a set of activities which protect, promote or improve health and prevent illness, injury or disability
- ❖ includes activities directed at an entire population, priority sub population, or individual
- ❖ activities carried out by public and private organizations, within and outside the health sector
- ❖ overall responsibility for identifying public health needs and coordinating and managing responses to these needs rests with government³³

As noted previously, public health professionals in Canada do not have an agreed upon set of core functions. There are however, five reoccurring themes which consistently appear throughout the literature review to articulate core functions. These are as follows:

- ❖ Disease and Injury Prevention
- ❖ Health Promotion
- ❖ Health Protection
- ❖ Health Surveillance
- ❖ Population Health Assessment

When we examine Health Protection and the programs operating within its the framework, there seems to be some consensus across Canada for the recognition of certain programs as residual to Health Protection. The Canadian Institutes of Health Research – The Institute of Population Health recognizes the following programs as under the umbrella of Health Protection³⁴:

- ❖ Restaurant inspections
- ❖ Community Care Facilities inspections
- ❖ Water treatment monitoring
- ❖ Air quality monitoring enforcement

Given the inconsistency and differences in program delivery across Canada, it is not surprising that the list of programs operating under the domain of Health Protection appears to be somewhat limited or incomplete. Tobacco Control and Tobacco Reduction, especially the enforcement aspect, is under the Health Protection core function, with significant recognition at both the national and provincial levels, yet it is not included in the list.

The question further arises, within the context of Canadian framework, where does Emergency Preparedness fit within the core function noted above or is it an entirely independent and separate core function as previously discussed. The National Advisory Committee on SARS... “has recommended that the current core functions be expanded to include greater investments in:

³² Nova Scotia Public Health Services. Who are we? What do we do?

³³ Nova Scotia Public Health Services. Who are we? What do we do?

³⁴ Canadian Institutes of Health Research –Institute of Population and Public Health. The Future of Public Health in Canada: Developing a Public Health System for the 21st Century. June 2003. Page 4.

disease surveillance systems; health emergency preparedness and epidemic response capacity; a major and urgently-needed program of development of public health human resources; substantial augmentation of research spending; enhancement of federal laboratories; capacity building partnerships with provincial and hospital laboratories pending other F/P/T investments; and coverage of relatively neglected areas such as environmental health, mental health, injury prevention and public health ethics.”³⁵

It is clearly evident that a more consistent approach and recognition mechanism is needed for determining both core functions and where various programs reside underneath these elements in the Core Competency Hierarchy. Consistency can only be obtained when all the stakeholders, corresponding agencies, and professional associations become part of any decision-making framework, thereby eliminating arbitrary deliberations and erroneous conclusions. This has yet to happen within the Canadian public health landscape and is pivotal to the development of a national framework. There is a sense in reading the literature review that many public health professionals are unaware of the role of the public health inspector and environmental health officer within the public health matrix. How can we work together, if we don't know what we do?

The Advisory Committee on Population Health (ACPH) has provided further referencing and definition to the present five core functions as noted:

Disease and Injury Prevention – Prevention consists of an intervention that has been shown to reduce significantly the likelihood that a disease or a disorder will affect an individual or that interrupts or slows the progression of that disease.

Health Promotion – Health Promotion is 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 to realize aspirations, to satisfy needs, and to change or cope with the environment.

Health Protection – Health Protection refers to actions that protect Canadians against health and safety risks. Science (providing evidence), surveillance (monitoring and forecasting health trends), risk management (assessment and responding to health risks) and program development (taking action) form the basis of health protection activities.

Health Surveillance – Health Surveillance is the tracking and forecasting of any health event or health determinant through the collection of data, and its integration, analysis and interpretation into surveillance products, and the dissemination of those surveillance products to those who need to know.

Population Health Assessment – Population Health refers to the health of a population as measured by health status indicators. Population Health focuses on the interrelated conditions and factors that influence the health of populations over the life course, identifies systematic variations in their patterns of occurrence, and applies the resulting knowledge to develop and implement policies and actions to improve the health and well-being of those populations.³⁶

³⁵ National Advisory on SARS and Public Health. October 2003.

³⁶ Advisory Committee on Population Health. Highlight Report 2001. Pages 21-25.

Competencies are generally referred to as the knowledge, skills and abilities (KSA'S) and behavioural objectives demonstrated by organization or system members that are critical to the effective and efficient function of the organization or system.³⁷ “Typically, competencies are general descriptions of the abilities needed to perform a role in the organization. Competencies are described in terms such that they can be measured. It's useful to compare competencies to job descriptions. Job descriptions typically list the tasks or functions and responsibilities for a role, whereas competencies list the abilities needed to conduct those tasks or functions. Consequently, competencies are often used as a basis for training by converting competencies to learning objectives.”³⁸ For this project, competencies should be in relation to the public health inspector or environmental health officer and his or her ability to perform the role and contribute to the delivery of public health services in any program area.

Competencies have been defined as:³⁹

- ❖ A complex combination of knowledge, skills and abilities demonstrated by organization members that are critical to the effective and efficient function of the organization (Center for Public Health Practice, Emory University).
- ❖ A combination of observable and measurable skill, knowledge, performance behavior and personal attributes that contribute to enhance employee performance and organizational success (American Compensation Association)
- ❖ Knowledge, skills, and attributes which are required to accomplish the desired outcomes, generally accepted but may be exemptions for individual jobs depending on actual job requirements(CDC/ATSDR).
- ❖ The level reached by a person who is initially a novice, and who, after training and experience, reaches the level where they can be competent; a “floor” or a basic collection of the minimum knowledge, skills, and values needed for an entry level specialist to practice dental public health. (SOURCE?)

A national study from the Healthcare Forum (Bridging the Leadership Gap in Healthcare) identified the top six competencies and values needed for the future:⁴⁰

- ❖ Mastering change
- ❖ Systems thinking
- ❖ Shared vision
- ❖ Continuous quality improvements
- ❖ Redefining health care
- ❖ Serving public/community

³⁷ Nelson, J., Essien, J., Loudermilk, R. and Cohen. 2002. The Public Health Competency Handbook: Optimizing Individual & Organizational Performance for the Public's Health. Center for Public Health Practice of the Rollins School of Public Health.

³⁸ Specifying Job and Role Competencies. McNamara, C. website.

³⁹ Gebbie, K. Competency-to-Curriculum Tool Kit: developing curricula for public health workers. Page 8.

⁴⁰ Health Canada – Health Care Network. Quest for Quality in Canadian Health Care: Continuous Quality Improvement. Page 4-5.

The Center for Disease Control and Prevention in conjunction with the Agency for Toxic Substances and Diseases Registry (CDC/ATSDR) in their Strategic Plan for Public Health Workforce Development has identified some competency needs for the health practitioner. “The public health workforce needs a well rounded realm of knowledge, skills, and abilities in response to expanding scope of functions of public health practice. Competency needs can be divided into three broad categories:⁴¹

- ❖ **Basic Competency:** provides a fundamental understanding of what public health is, what it does and generally how it achieves its mission (e.g., courses or programs such as “Orientation to Public Health Practice of “Public Health 101”).
- ❖ **Cross cutting (Core) Competencies:** provides general knowledge, skill and ability in areas which enable performance of one or more essential service. Table 1 lists at least seven distinct competency areas that are the foundation for performing essential services. For example, competence in epidemiology, policy development, health communications, community needs assessment and mobilization, behavioral science, cost-effectiveness can be defined as cross cutting. These competencies requirements can be further refined based on one’s discipline, functional role, organizational setting or programmatic focus.
- ❖ **Technical Competencies:** provides technical knowledge, skills and abilities needed for a defined program area (e.g., control of infectious disease, chronic disease prevention, environmental health, genetics testing). These technical competencies often build upon basic core competencies and represent unique application of skills to a particular health problem or issue (e.g., emergency response for bioterrorism).

The Rollins School of Public Health at Emory University⁴² in Atlanta, Georgia defines competencies as critical to:

- ❖ becoming a learning team in a learning organization?
- ❖ promoting and supporting organizational change?
- ❖ engaging in the process of participatory planning?
- ❖ performing the core public health functions?
- ❖ providing the essential public health services?

Competencies for the public health inspector and environmental health practitioner are defined by the American Public Health Association and National Center for Environmental Health, Center for Disease Control and Prevention as **“a cluster of related knowledge, skills and attitudes that affect a major part of one’s job (a role or responsibility), that correlates with performance on the job, that can be measured against some accepted standards, and that can be improved by training and development.”**⁴³

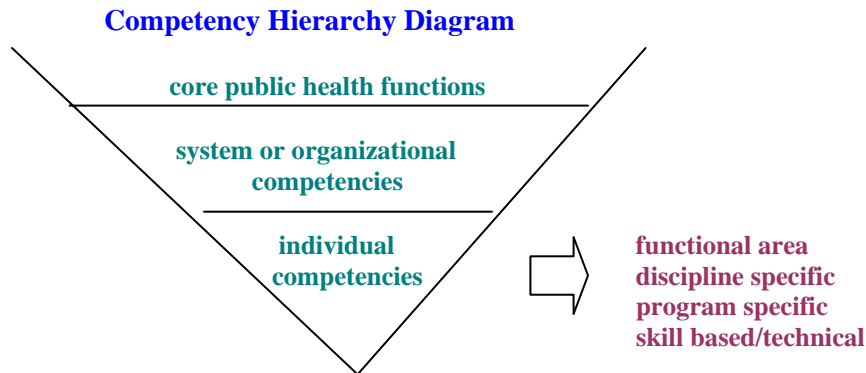
There further exist two distinct sets of competencies below that of core functions within the strategic framework, namely - **system or organizational competencies** and **individual competencies**. These are subsequently defined by type according to **specific function, discipline,**

⁴¹ CDC/ATSDR. Strategic Plan for Public Health Workforce Development: Towards a life-long learning system for public health practitioners. Page 7.

⁴² Rollins School of Public Health at Emory University website: ww.sph.emory.edu/cphp/projects/abstract

⁴³ Parry, S.R. “The Quest for Competencies Training.” July 1996. Page 50.

program and **skill**. This is further expanded upon in the Competency Hierarchy Diagram below, which clearly illustrates the interrelationship of the various elements within the hierarchy.



The **core public health functions** are those previously noted throughout the paper, namely disease and injury prevention; health promotion; health protection; health surveillance and population health assessment. Below the functions exists two levels of competency. The upper level is known as systems or organizational competency and this refers to the overall organizational goals, outcomes or objectives for the public health service provider.

The Rollins School of Public Health has developed *The Public Health Competency Handbook: Optimizing Individual & Organizational Performance for the Public's Health*⁴⁴ which examines the interrelationship of the competencies, explains the process of incorporating them into the work environment and articulates a performance management system. The authors have proposed and validated seven **systems or organizational competencies** within the framework, namely:

- ❖ *Visionary Leadership/Empowerment* - collaborative leadership to reach the shared vision
- ❖ *Communication* - dynamic process grounded in respect for diverse voices
- ❖ *Information Management* -using technology to manage the transfer of information to end-users
- ❖ *Assessment, Planning and Evaluation* – the continuous quality improvement cycle
- ❖ *Systems Thinking* – future oriented problem solving and decision making
- ❖ *Promoting Health and Preventing Disease* – putting science and the art of public health into action

When examining the organization competencies, it is important to frame this with the WIIFM concept – **What's In It For Me?** As part of the strategic framework and business plan for the development of core competencies for public health inspectors and environmental health officers, the employers group was identified as a key stakeholder in the process. If the expectation is that employers will actively participate in the developmental stage of core competencies for **their employees**, then it is essential that we clearly articulate the WIIFM concept.

⁴⁴ Nelson, J., Neissen, J., Loudermilk, R. and Cohen, D. 2002.

The question becomes, how will the organization as a whole benefit from having public health inspectors and environmental health officers adapt core competencies? Will there be a cascading, or spillover effect to other health professionals within the organization? What are the costs and who will pay is probably the first question to be asked.

The benefits to the organization have been summarized by Kristine Gebbie in the Competency-to-Curriculum Tool Kit, which is an excellent resource for developing the public health workforce. “Competencies are in themselves none of the following, but they may be useful in developing:⁴⁵

- ❖ specific job descriptions
- ❖ needs assessment
- ❖ curricula
- ❖ new employee orientation and employee training
- ❖ self-assessment by public health employees

It can be generally stated that the development of competencies within an organizational framework will further help to...“facilitate communication across programmatic and organizational lines, and facilitate career growth.”⁴⁶

Next, is the **individual competency**, which is identified as the essential skills that employees must possess to perform their role, or job function within the organization. Many individual competencies can be found within the employee job description and thus...“can be useful in career planning, orientation, learning needs assessment, self assessment of performance and meeting discipline specific requirements/certification.”⁴⁷ Individual competencies intersect with systems or organizational competencies.

Functional area competencies can further be defined by type. Many of these are cross cutting activities including skills, knowledge and attitude. These competencies are further broken down by their application to the three primary areas of organizational operation, i.e. front line staff, senior level staff and management level. When examining the functional area competencies, the domains are leadership, management or secretarial functions. Many of these functions are part of a job description or job summary for most public health professionals. Unfortunately, there has been no transference from the job description to the functional area competencies identified for any of the public health disciplines. This is not surprising, since there does not exist an agreed upon list of core public health functions as a starting point. Public health professionals across Canada are working to develop Standards of Practice, which will contain core function elements. Currently, the Community Health Nurses Association (CHNAC) is the most advanced public health discipline in this endeavour.

When examining **discipline** and **program competencies**, we begin by thinking of the different disciplines and programs operating within the public health framework. This list is extensive and terminology varies across the nation, however, many of these are found within the following list:

⁴⁵ Gebbie, K. Competency-to-Curriculum Tool Kit: developing curricula for public health workers. Discussion draft developed by Competencies & Curriculum Workgroup. 2002. Page 7.

⁴⁶ Gebbie, K. Competency-to-Curriculum Tool Kit: developing curricula for public health workers. Discussion draft developed by Competencies & Curriculum Workgroup. 2002. Page 7.

⁴⁷ Roberts, J. and Sedler, K. The Core Competencies for Basic Midwifery Practice, Critical ACNM Document. Revised. 1997. Page 371.

List of Public Health Disciplines:

- ❖ Public Health Inspectors
- ❖ Public Health Nurses
- ❖ Medical Health Officers
- ❖ Epidemiologists
- ❖ Dietician and Nutritionists
- ❖ Community Care Nurses
- ❖ Health Educators/Health Planners
- ❖ Tobacco Enforcement Officers
- ❖ Environmental Impact Specialists
- ❖ Environmental Health Assessment Specialists
- ❖ Emergency Response Professionals
- ❖ Emergency Health Planners
- ❖ Risk Assessment Specialists
- ❖ Risk Communication Specialists
- ❖ Occupational Therapist and Physiotherapists
- ❖ Speech Language Pathologists
- ❖ Dental Hygiene Professionals
- ❖ Early Childhood Educators
- ❖ Program Managers
- ❖ Health Administrators

The disciple and program specific competencies as can be seen from the aforementioned list, covers the breadth of the public health continuum and within the entire scope of governance. Discipline specific competencies are those necessary for the performance of specialized roles, or specific jobs within public health. The Core Competencies Steering Committee need only be concerned with those disciplines that are part of the core function Health Protection and Emergency Preparedness.

The greater our understanding of what public health and all the constituent components are, what they do, and how they do it in relation to all the other elements of the public health framework, then the greater will be our knowledge in understanding and developing core competencies. Through a more thorough and better understanding of all the element of public health, we are therefore better to determine the best structure for a sustainable future. Core competencies will become a major pillar of that foundation, helping to underpin a more robust and dynamic public health framework and workforce. This corroborates the work of both the Standing Senate Committee on Social Affairs, Science and Technology and that of the National Advisory Committee on SARS and Public Health in building a better and more cost effective public health system, capable of providing better health for all Canadians.

Environmental health and protection is defined in the United States as...“the art and science of protecting against environmental factors that adversely impact human health or the ecological balances to long-term human health and environmental quality, whether in the natural or human-made environment. These factors include, but are not limited to air, food and water contaminants; radiation, toxic chemicals, wastes, disease vectors, safety hazards, and habitat alterations.”⁴⁸

⁴⁸ The Future of Environmental Health, Journal of Environmental Health, 1993. Vol. 55, No. 4, Pages 28-32.

Within the Australian Charter of Environmental Health, this definition is far more concise and better reflects Canadian thinking. “Environmental health is not synonymous with the health of the environment and environmental protection, and is not restricted to the epidemic diseases of the last century. Environmental health is about creating and maintaining environments which promote good public health.”⁴⁹

For the purpose of the Core Competencies Project, we will define a **public health inspector** and/or an **environmental health officer**, as a person who holds of a Certificate of Public Health Inspection Canada, designated as CPHI (C), as issued either by the Board of Certification (BOC), Canadian Institute of Public Health Inspectors or the Canadian Public Health Association, and has a minimum of five years experience and operates within the core function of Health Protection. For the purpose of the Core Competencies Project, the Core Competencies Steering Committee in its deliberations should consider Emergency Preparedness as an element for which the public health inspector and environmental health officers is an active participant.

The traits and characteristics of an effective environmental health practitioner have been identified in the Environmental Health Competency Project, May 2001⁵⁰ in the United States and can be found at Appendix D in the document.

We have a strong and abiding obligation to help make the quality of work for our employees one that helps enhance their humanness and creates a culture that supports and encourages growth and creativity.

–Sluyter, 1996

The National Center for Environmental Health Model of Core Competencies

The National Center for Environmental Health, Centers for Disease Control and Prevention (CDC) in the United States in partnership with the American Public Health Association identified and articulated fourteen core competencies for the environmental health practitioner. This model was subsequently adopted by the National Environmental Health Association (NEHA). These environmental health program competencies are imbedded within the three primary function hierarchies of – **assessment**, **management**, and **communication**.⁵¹ These primary functions, or core functions are adaptable to the Canadian public health landscape.

⁴⁹ The National Environmental Health Strategy, enHEALTH, Commonwealth of Australia, Produced by enHEALTH Council Secretariat. August 2002. Page1.

⁵⁰ Environmental Health Competency Project: Recommendations for Core Competencies for Local Environmental Health Practitioners. Pages 18-19.

⁵¹ Environmental Health Competency Project: Recommendations for Core Competencies for Local Environmental Health Practitioners. Pages 2-3.

Within the three primary functions, or core functions are 14 core competencies. These core competencies are grouped and defined as follows⁵²:

A.) ASSESSMENT

Information Gathering: The capacity to identify sources and compile relevant and appropriate information when needed, and the knowledge of where to go to obtain the information

Data Analysis and Interpretation: The capacity to analyze data, recognize meaningful test results, interpret results, and present the results in an appropriate way to different types of audiences.

Evaluation: The capacity to evaluate the effectiveness or performance or procedures, interventions and programs

B.) MANAGEMENT

Problem Solving: The capacity to develop insight into and appropriate solutions to environmental health problems.

Economic and Political Issues: The capacity to understand and appropriately utilize information concerning the economic and political implications of decisions.

Organizational Knowledge and Behavior: The capacity to function effectively within the culture of the organization and to be an effective team player.

Project Management: The capacity to plan, implement, and maintain fiscally responsible programs/projects using appropriate skills, and prioritize projects across the employee's entire workload.

Computer & Information Technology: The capacity to utilize information technology as needed to produce work products.

Reporting, Documentation and Record-Keeping: The capacity to produce reports to document action, keep records, and inform appropriate parties.

Collaboration: The capacity to form partnerships and alliances with other individuals and organizations in order to enhance performance on the job.

⁵² Environmental Health Competency Project: Recommendations for Core Competencies for Local Environmental Health Practitioners. Pages 3-4.

C.) COMMUNICATION

Educate: The capacity to use the environmental health practitioner's front-line role to effectively educate the public on environmental health issues and the public health rationale for recommendations.

Communicate: The capacity to effectively communicate risk and exchange information with colleagues, other practitioners, clients, policy-makers, interest groups, media, and the public through routine activities, public speaking, print and electronic media, and interpersonal relations.

Conflict Resolution: The capacity to facilitate the resolution of conflicts within the agency, in the community, and with regulated parties.

Marketing: The capacity to articulate basic concepts of environmental health and public health and convey an understanding of their value and importance to clients and the public.

Within this model examples are provided for how a capacity can be applied. For example, in the core competency of Conflict Resolution, an example would be as follows:⁵³

- ❖ Know when conflict resolution can be used and when it cannot, either because of a lack of authority or because of the intractable nature of the conflict. Recognize the limits of authority and flexibility. Typical conflicts involve complaint investigation or disagreements over a regulation, where clients might inform the practitioner that they have conducted business a certain way for years and see no reason to change, then announce their intention to seek redress from elected officials.
- ❖ Use effective listening skills.
- ❖ Exhibit respect for diversity.
- ❖ Understand the history and context of the conflict.
- ❖ Identify the nucleus of the problem, separate from symptoms.
- ❖ Find common ground and areas of agreement (as well as non-negotiable areas).
- ❖ Determine the willingness of the parties involved to negotiate and promote that willingness.
- ❖ Obtain the necessary resources to resolve conflict (e.g., use of facilitators or mediators).

At the 2001 Environmental Health Conference hosted by the Association of Schools of Public Health and attended by a faculty of 25 of the 30 Schools of Public Health, attendees were asked what kind of Preparedness Will the Workforce of the Future Need? The summarize response was

⁵³ Environmental Health Competency Project: Recommendations for Core Competencies for Local Environmental Health Practitioners. Page 16.

as follows: “Most frequently reported was the need for scientific knowledge and mastery of technical skills. Following fundamental technical knowledge, skills and abilities, the focus was on those skills frequently associated with the human element of practicing environmental health, including oral and written communication skills with a wide range of internal (agency) and external (community) audiences, management, financing and budgeting principles, problem solving, critical and systems thinking and continued professional development.”⁵⁴

Much can be learned through a complete examination of the National Centers for Environmental Health, Centers for Disease Control and Prevention model; however it is important to be mindful of the differences in the education and certification processes that exist on both sides of the border for public health inspectors and environmental health officers. With this a reference, the Chartered Institute of Environmental Health Officers’ Assessment of Professional Competence (APC) Scheme should also be considered. The APC is an assessment of the skills which have developed during practice, and are considered essential in enabling the technical knowledge and skills of the practitioner. This model is much simpler in its structure and possibly utilization. Nowhere does the literature review indicate that a more complex model is actually a better model.

Table 2 at the back of the document examines the comparison of the core function of Health Protection across the global public health landscape with a reoccurring theme of that of regulator and enforcer. No mention is given to the role of the public health inspector and environmental health officer as an educator.

Barriers to Achieving Core Competencies

Just as critical to providing clear definitions surrounding core functions and core competencies, is the recognition of potential barriers to achieving core competencies. The Center for Disease Control and Prevention in conjunction with the Agency for Toxic Substances and Diseases Registry (CDC/ATSDR) in their Strategic Plan for Public Health Workforce Development has identified some of the barriers to achieving ongoing competency in the workforce. Many of these spill over into the Canadian public health landscape. These barriers are identified as:

- ❖ In contrast to other professions, an updated inventory of the workforce does not exist. As a result, planning has been hampered by a lack of knowledge of the population in need of training and continuing education. Further, a standard nomenclature on occupational title and organizational setting has not been used to enumerate the public health workforce. Finally, information from which to forecast personnel needs or related training requirements is limited.
- ❖ A national consensus does not exist on the basis and cross cutting competencies or curricula/content elements needed in public health. While progress is being made in competency identification/validation for specific disciplines or technical content areas, significant gaps still exist in the availability/accessibility of needed job related training.
- ❖ An integrated delivery system for life-long learning does not exist. Although current approaches provide useful learning opportunities, the learner faces a fragmented array of choices which use different technologies, may be of unequal quality or value, and often lack user-friendly systems for registration, course support and feedback.

⁵⁴ Association of Schools of Public Health. Summary of 2001 Environmental Health Conference. Sustaining the Environmental health Workforce. 2001. Page 5.

- ❖ Inadequate incentives exist for participation in training and continuing education. National competency standards do not exist for public health workers which could positively influence participation in life-long learning activities.
- ❖ A uniform approach and commitment to evaluation are absent, whether the objective of evaluation is the individual, program/curricula or the system itself. (i.e., workforce development initiatives)
- ❖ Financing of workforce training and continuing education is hampered by the absence of a coherent policy framework and strategies for funding these activities. For example, HRSA reports lack of congressionally appropriated dollars for Title II of PHS Act program authorities as an obstacle in financing its training and continuing education responsibilities for the public health workforce.⁵⁵

Numerous government of Canada committee reports, advisory councils and federal commissions have echoed a national call for action. Clearly, without a strong financial commitment to life-long learning and continuing education, the Canadian public health system like its American counterpart is doomed to failure. Governmental commitment at all levels is critical to the success of developing a competent workforce. Although continuing education and public health are generally recognized as provincial responsibilities, it is apparent that a greater federal presence is required in public health.

In the Health Canada – Learning from SARS, Executive Summary there is clear recognition of a more urgent need for federal dollars. “Public health in the first instance is a local enterprise. Provinces and territories in turn must fund, support, and coordinate local activities through their own agencies and ministries. As a corollary, the containment of SARS was clearly dependant on local and provincial efforts in Ontario and British Columbia. Even greatly enhanced technical support and outbreak investigation by a federal agency will be somewhat irrelevant if the local and regional capacity for outbreak response is weak. The public health infrastructure needs strengthening at all levels, and this in turn suggests the need for earmarked federal funding that is not currently provided.”⁵⁶

The Naylor Report also recognizes the need to address the concerns of organizations and agencies with respect to not only structure, but also required improvements to business processes, information sharing as well as knowledge capacity and dissemination. These processes can be made more effective through:⁵⁷

- ❖ defined, optimized and agreed upon programs and business processes, including a streamlined and enhanced capacity to assist with the management of outbreaks of disease and threats to health, including linkages to clinical systems
- ❖ standards and best practices

⁵⁵ CDC/ATSDR. Strategic Plan for Public Health Workforce Development: Towards a life-long learning system for public health practitioners. Page 10.

⁵⁶ Health Canada – Learning from SARS. Executive Summary. Pages 6-7.

⁵⁷ National Advisory Committee on SARS and Public Health. Learning from SARS – Renewal of Public Health in Canada. Health Canada. October 2003. Page 71.

- ❖ research related to population and public health
- ❖ central resource for knowledge translation and evidenced-based decision-making, including the identification of research needs
- ❖ evaluation of population and public health programs
- ❖ an information infrastructure , including information architecture, models, and standards, technology transfer, privacy and information management, development of data sources and system development.

Developmental Process

A significant amount of work in the development of core functions and core competencies for the public health workforce has occurred in the United States and has been guided, championed and funded by and the National Center for Environmental Health, Centers for Disease Control and prevention (CDC). This work has taken place over the past decade; however the urgency to develop the knowledge, skill, and abilities (KSA's) of the public health workforce of today is mounting. The Canadian public health system cannot wait another ten years for this to be a reality. The call for action is now!

The competency developmental process is unique to each organization that undertakes to develop a core competency framework. Organizational needs are as diverse as the employee within the organization. These needs will vary from organization to organization, however there does exist some reoccurring themes in the core competency developmental process.

To underpin the Core Competency Project for the Canadian Institute of Public Health Inspectors it would be ideal if the core functions for public health in Canada were agreed upon by all the various stakeholders. Clearly, this will not happen overnight, nor will it happen without the input of all the relevant stakeholders, constituents and government agencies involved. Having said that, it will be critical for the Core Competency Steering Committee to formulate the core function of health protection and include those elements necessary to define the programs that public health inspectors and environmental health officers perform under the Health Protection banner.

To assist with this task, Table 3, a Collection Of Competency Sets Of Public Health-Related Occupations and Professions, which identifies the *known competency sets, worker level and status and where to find them* for the various environmental health practitioners, as outlined in the Competency-to Curriculum Tool Kit⁵⁸ serves as excellent reference material and is provided at the very end of the document.

It is essential that a framework or process be developed for the project to help guide the Core Competency Steering Committee towards the creation of core competencies for public health inspectors and environmental health officers working within the Health Protection core function. It is anticipated that the literature review will assist with shortening the learning curve in the developmental process of this project.

⁵⁸ Gebbie, K. Competency-to-Curriculum Tool Kit: developing curricula for public health workers. Discussion draft developed by Competencies & Curriculum Workgroup. 2002. Pages 18-22..

Terms of Reference

- ❖ the terms of reference will help frame the overarching components of the project
- ❖ stakeholder identification and critical analysis, “brain storming”, strategic thinking
- ❖ develop the “big picture” – who, what, where, when, how and most importantly why
- ❖ determine the target audience for core competency development; timelines; communication strategies; training, continuing education and testing components
- ❖ a strategic implementation plan will need to be considered
- ❖ a monitoring and evaluation component will need to be considered for the framework

Core Function Determination

- ❖ Core Competencies Steering Committee will need to examine the core function of Health Protection and determine which programs reside within this domain
- ❖ the issue of Emergency Preparedness as a stand alone core function or as an umbrella to an existing function will need to be determined

Core Competency Identification

- ❖ identify if any core competencies are already in place, include an examination of other regulatory frameworks and agencies identified in the literature review
- ❖ identify and define what are the core competencies required for public health inspectors and environmental health officers underpinned by knowledge, skills and abilities
- ❖ follow a successful model, such as the WHO Delphi model
- ❖ undertake a gap analysis with education centre for public health inspectors with respect to learning outcomes and core competencies
- ❖ make a distinction between “academic” and “practice” knowledge, skills and abilities
- ❖ determine which competencies are “cross cutting” and transcend the boundaries of specific public health disciplines
- ❖ develop potential competencies using the literature review and experts with the Core Competency Steering Committee
- ❖ ensure that identified competencies are not overwhelming in scope
- ❖ develop competencies that are measurable and actionable
- ❖ specify competencies for emerging areas of expertise, i.e., bioterrorism
- ❖ determine if front line personnel require the same set or a different set of competencies from senior level staff or supervisory and management staff
- ❖ determine training needs and delivery methodology: classroom, distance- based, Annual Educational Conferences
- ❖ develop a train the trainer model, or assessment team
- ❖ and demonstrate to practitioners how competencies are used
- ❖ validate the core competencies
- ❖ consider a framework for the future updating of competencies

No amount of guidance and assistance can offset the on-hand learning experience associated with this project. If the public health system is to be successful in restructuring and renewing itself, then it is essential that we learn from our past. Much of our future is imbedded in our past.

*“Would you tell me, please, which way I ought to go from here?”
asked Alice. “That depends a good deal on where you want to get to,”
said the cat. “I don’t much care where,” said Alice. “Then it doesn’t
matter which way you go,” said the cat .
-Alice in Wonderland*

Concluding Remarks

The above quote is an excellent analogy of what has happened to public health in Canada in the past. How do we enhance the public health framework, if we don’t know where it leads to? Just like Alice, the public health system in the past has lacked a road map to where it needs in order to sustain itself for the future, thus better protecting the health of all Canadians. If we look at the three questions posed by the Krever Commission, (what did you know? when did you know it? what did you do about it?) in relation to basic principles of disease prevention and disease control, then yes, we in public health have failed miserably. Tomorrow’s public health system must be founded in a framework capable of meeting these basic tenets across the entire decision-making process.

Within the developmental framework of the “new” public health system, we must be able to define public health; define the overarching systems architecture of public health; define core functions of public health; define what does public health does; define who is responsible for what within public health; develop an accountability framework for public health; and develop a public health communications strategy. Core competencies allows us an opportunity to move out of individual silos and toward cross cutting core competencies that transcend specific disciplines and sectoral boundaries. This clearly is no easy task, nor will it happen overnight.

The process is analogous to constructing a house: blueprints and drawing are required; engaging trades persons, securing the necessary funds, ordering materials, pouring the foundation, installing the supporting beams, monitoring and evaluating the process, revising drawings as required, measuring, collaborating with other trades persons, different work happening at the same time in a coordinated manner, etc. If the construction industry operated within a similar framework to the public health system, there would be severe consequences.

The development of core competency is just one of many strategies necessary for the development of an enhanced public health system built on a foundation of knowledge, skills and abilities. Epidemiology serves as an excellent foundation for the entire public health system given it is cross cutting throughout public health and the personal health care network as well. Principles of epidemiology afford the decision-maker a basic tool for public health and should become part of the key building blocks in health reform.

We will conclude by leaving the reader with the following thought.

Dedication alone will not protect the health of Canadians. We must do more in developing proactive and robust processes and infrastructures that will better prepare us and lessen the need for a more reactive response to further incidents.

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APPENDIX B: CORE COMPETENCIES STEERING COMMITTEE MEMBERS

Scott MacLean, National President CIPHI (New Brunswick)

Bernie Chrisp, Chairman Board of Certification, CIPHI (Manitoba)

John Pelton, Director, Calgary Regional Health Authority (Alberta)

Ron de Burger, Director, Toronto Healthy Environments (Ontario)

Nic Losito, Director, Vancouver Coastal Health Authority (British Columbia)

Dean Sargeant, Underwriters Laboratories Canada Inc. (Manitoba)

Yvonne Graf, Director, Saskatoon Environmental Health (Saskatchewan)

Klaus Seeger, Chairman, Environmental Health Foundation of Canada (Ontario)

Cal Morgan, Director, Health & Community Services (Newfoundland)

Grace Maciver, Health Canada, Kelowna (British Columbia)

Tamela Carroll, President, New Brunswick Branch, CIPHI (New Brunswick)

Peter Parys, Director, Environmental Health, City of Winnipeg (Manitoba)

Doug Quibell, Program Head, College of the North Atlantic-Qatar (Qatar)

Dr. David Carpenter, Canadian Armed Forces, Ottawa (Ontario)

Dr. John Blatherwick, Chief Medical Health Officer, Vancouver Coastal Health Authority (British Columbia)

Gary Gallivan, Program Head, College of Cape Breton (Nova Scotia)

Len Gallant, President, Nova Scotia-PEI Branch, CIPHI (Prince Edward Island)

Cathy Egan, Director, Health Protection, Waterloo Health Region (Ontario)

Craig Nowakowski, Stanton Territorial Health Authority (North West Territories)

APPENDIX C: STRATEGIC PLANNING FRAMEWORK**Phase I: 2004 Strategic Plan**

Deliverable	Milestone
Prepare Literature Review Document.....	Mar 15, 2004
Select Core Competency Steering Committee Members	Mar 15, 2004
Final Reports to Health Canada.....	Mar 31, 2004
Present Report & Business Plan to National Executive Council CIPHI.....	Apr 16-17, 2004
Identify CIPHI Champions.....	Apr 20, 2004
Compile Comments & Feedback for Steering Committee.....	Apr 20, 2004
Present Business Report & Plan to BOC.....	May 9, 2004
Compile Comments & Feedback for Steering Committee.....	May 10, 2004
Develop Clear Definitions for Core Competencies Steering Committee.....	May 15, 2004
Provide Feedback to All Stakeholders	May 30, 2004
Provide Literature Review to All Stakeholders.....	June 15, 2004
Establish NEC & BOC Working Committee in Charlottetown.....	June 26-27, 2004
Evaluate Progress to Date/ Reposition if Necessary	July 15, 2004
Convene Core Competency Steering Committee Meeting	Summer, 2004
Introduce Core Competencies to Select CIPHI Branches	Summer/Fall 2004
Identify CIPHI Branches Champions.....	Summer/Fall 2004
Develop Framework for Presentation to Select Employers	Summer/Fall 2004
Present Findings to Date to NEC & BOC.....	Fall 2004
Finalize Implementation Strategy at NEC/BOC Fall Meetings.....	Fall 2004
Develop National Registry for Qualified Professionals	Fall 2004
Various Champions to Meet with Select Employers	Fall 2004
Compile Comments & Feedback for Steering Committee.....	Fall 2004
Announce Core Competency Requirements to the Profession	Nov 15, 2004
Develop Strategy for Communication to Employers Groups	Dec 1, 2004
Evaluate Progress to Date.....	Dec 15, 2004

Phase II: 2005 Strategic Plan

Deliverable	Milestone
Reconvene Core Competencies Steering Committee	Jan 30, 2005
NEC/BOC to Review Progress to Date.....	Feb 15, 2005
Pilot Core Function Assessment	Mar 2005
Assess Project & Develop Candidate Core Function Retraining Program	Mar 30, 2005
Evaluate Pilot & Modify as Required	Apr 15, 2005
NEC to Finalize National Implementation Rollout & Timeline	Apr 30, 2005
Finalize Framework for Presentation to All Employment Agencies	May 30, 2005
Commence Initial Core Competency Assessment.....	July 1, 2005
Complete Initial Core Competency Assessment/Registration.....	Dec 31, 2005
Begin Initial Retraining Program	Feb 15, 2006
Complete Initial Retraining Program.....	June 30, 2006

APPENDIX D: TRAITS AND CHARACTERISTICS OF AN EFFECTIVE ENVIRONMENTAL HEALTH PRACTITIONER

- ❖ Positive attitude
- ❖ Versatility and flexibility
- ❖ Practical perspective and common sense
- ❖ Strong principles and ethics
- ❖ Practitioner integrity
- ❖ Strong work ethic
- ❖ Tenacity
- ❖ Willingness to learn
- ❖ Focus on fair solutions
- ❖ Collaborative spirit
- ❖ Willingness to embrace change
- ❖ Involvement with community
- ❖ Calmness during conflict
- ❖ Understanding of other points of view
- ❖ Ability to observe
- ❖ Focus on team accomplishments
- ❖ Appropriate appearance and body language
- ❖ Ability to lead
- ❖ Big-picture perspective
- ❖ Respect for diversity

- ❖ Knowledge to when to ask for help

TABLE 1: CROSS CUTTING (CORE) COMPETENCIES FOR PUBLIC HEALTH

Competency Area	Examples
Analytic	<ul style="list-style-type: none"> ❖ Identifies potential strategic issues through ongoing macro environmental scanning. ❖ Obtains and interprets information regarding risk factors ❖ Knows data collection process, technology, transmission capability and computer systems storage/retrieval capacities in order to access health related information.
Communication	<ul style="list-style-type: none"> ❖ Listens to others in unbiased manner and respects points of view of others. ❖ Promotes the expression of diverse opinions and perceptions. ❖ Persuades and influences individuals and groups by increasing knowledge, shaping attitudes, and modifying behaviors towards disease prevention and health promotion.
Policy Development	<ul style="list-style-type: none"> ❖ Interprets information regarding the health status of individuals or populations in order to formulate and prioritize goals and objectives. ❖ Educates health care, legislative and media representatives about the need for new public health programs.
Cultural	<ul style="list-style-type: none"> ❖ Appreciates the importance of diversity within the public health workforce. ❖ Learns appropriate methods of interacting with stakeholders from varied cultural, racial and ethnic groups. ❖ Identifies opportunities for improving stakeholders/public health worker interaction.
Basic Public Health Science	<ul style="list-style-type: none"> ❖ Can relate the PH core functions to essential public health services. ❖ Understands the role of assessment, assurance and policy development in the delivery of essential services. ❖ Understands how to accomplish effective community engagement.
Leadership & Systems Thinking	<ul style="list-style-type: none"> ❖ Helps define key values and uses these principles to guide action. ❖ Understands the need to see the interrelationship rather than cause-effect chains. ❖ Empowers others to create and implement plans based on a shared vision.
Management & Information Management	<ul style="list-style-type: none"> ❖ Matches budget priorities with strategic plan. ❖ Manages information systems for collection, retrieval and use of data for decision-making.

TABLE 2: COMPARISON OF CORE FUNCTIONS WITHIN THE GLOBAL HEALTH PROTECTION FRAMEWORK

COUNTRY	CORE FUNCTION
CANADA	<ul style="list-style-type: none"> ❖ Restaurant inspections ❖ Community Care Facilities inspection ❖ Water treatment monitoring ❖ Air quality monitoring/enforcement
UNITED STATES	<ul style="list-style-type: none"> ❖ Enforce laws and regulations that protect health and ensure safety
PAHO	<ul style="list-style-type: none"> ❖ Essential Public Health Function (EPHF)⁶ ❖ Strengthening of Institutional Capacity for Regulation and Enforcement in Public Health
WHO	<ul style="list-style-type: none"> ❖ Occupational health ❖ Protecting the environment ❖ Public health legislation and enforcement
WHO- PACIFIC REGION	<ul style="list-style-type: none"> ❖ Regulation and enforcement to protect public health
AUSTRALIA	<ul style="list-style-type: none"> ❖ Promote, develop, support and initiate actions which ensure safety and healthy environments
ENGLAND	<ul style="list-style-type: none"> ❖ Ensuring compliance with regulations and laws to protect and promote health

TABLE 3: COLLECTION OF COMPETENCY SETS OF PUBLIC HEALTH-RELATED OCCUPATIONS AND PROFESSIONS

Updated for the *Public Health Workforce Development Annual Meeting*,
September 12-13, 2001, Athens, GA

A) CORE – BASIC PUBLIC HEALTH

Known Competency Set	Worker Level	Status and Where to Find Them
<i>Competencies for Providing Essential Public Health Services</i> , 1997	professional	<i>The Public Health Workforce: An Agenda for the 21st Century</i> , Public Health Functions Project, ODPHP, DHHS essential services
<i>Council on Linkages: Core Competencies for Public Health Professionals</i> , 2001	front-line, senior professional, supervisor, manager	Public Health Foundation (PHF),
<i>Principles of Public Health</i> course, 2001	leader, professional, technical	Based on <i>Healthy People 2010</i> , Missouri Public Health Training Network
<i>Public Health 101</i> course, 2000	professional	Based on Bernard Turnock's text <i>Public Health: What It is and How It Works</i> , 2000, Illinois Center for Public Health Preparedness
<i>Core competencies for MPH Students</i> , 1998	MPH student	Johns Hopkins School of Public Health, Master of Public Health
<i>Masters of Public Health (MPH) in Health Behavior & Health Education</i>	MPH student	University of Michigan School of Public Health, Department of Health Behavior and Health Education
<i>Public Health 101</i> course, 2000	professional	Based on Bernard Turnock's text <i>Public Health: What It is and How It Works</i> , 2000, Illinois Center for Public Health Preparedness
<i>Core competencies for MPH Students</i> , 1998	MPH student	Johns Hopkins School of Public Health, Master of Public Health
<i>Masters of Public Health (MPH) in Health Behavior & Health Education</i>	MPH student	University of Michigan School of Public Health, Department of Health Behavior and Health Education

TABLE 3: COLLECTION OF COMPETENCY SETS OF PUBLIC HEALTH-RELATED OCCUPATIONS AND PROFESSIONS continued**B) FUNCTIONAL – ENVIRONMENT**

Known Competency Set	Worker Level	Status and Where to Find Them
<i>Environmental Health Competency Project: Recommendations for Core Competencies for Local Environmental Health Practitioners, May 2001</i>	front-line, local-level professional	American Public Health Association (APHA) and National Center for Environmental Health (NCEH/CDC) with NEHA, NACCHO, ASTHO, FCA, AAS, NALBOH, final draft in clearance June 1, report due August 2001. Patrick Bohan, NCEH
<i>Environmental Health Competencies: Core Competencies for the Effective Practice of Environmental Health</i>	professional	Funding Opportunity, Association of School of Public Health (ASPH), Developing Communities of Excellence in Environmental Health
<i>Registered Environmental Health Specialist/Registered Sanitarian Examination</i>	entry-level professional	National Environmental Health Association (NEHA)

C) NEW TOPICAL AREAS – EMERGENCY RESPONSE

Known Competency Set	Worker Level	Status and Where to Find Them
<i>Core Public Health Worker Competencies for Emergency Preparedness and Response, April 2001</i>	leader, administrator, professional, technical, support	Center for Health Policy, Columbia University School of Nursing

TABLE 3: COLLECTION OF COMPETENCY SETS OF PUBLIC HEALTH-RELATED OCCUPATIONS AND PROFESSIONS continued**D) FUNCTIONAL – LEADERSHIP**

Known Competency Set	Worker Level	Status and Where to Find Them
<i>Public Health Leadership Competency Framework, August 2000</i>	health director, health officer	Public Health Leadership Network (PHLN), CDC Wright, K, Rowitz, L., Merkle, A. et al. “Competency Development in Public Health”, <i>American Journal of Public Health</i> , August 2000, vol 90, no 8.
<i>Project Management Body of Knowledge, (PMBOK Guide) 2000</i>	leader, project manager	Public Health Leadership Institute (PHLI), CDC Guide found at Project Management Institute
<i>Leadership Competencies for Assistant Deputy Ministers and Senior Executives</i>	senior manager	The Learning Centre, Public Service Commission of Canada
<i>Leadership Development Competencies: The Leadership Challenge</i>	leader	Exploring Inspired Leadership, The Banff Center

TABLE 3: COLLECTION OF COMPETENCY SETS OF PUBLIC HEALTH-RELATED OCCUPATIONS AND PROFESSIONS continued**E) FUNCTIONAL – MANAGEMENT**

Known Competency Set	Worker Level	Status and Where to Find Them
<i>Core Competencies for Supervisors, Managers, and Executives, 2000</i>	director, executive, team leader, program manager, supervisor	School of Public Health Leadership & Management Development, CDC Corporate University; Vicki Johnson, HRMO,
<i>Supervisors' and Managers' Critical Elements, October 1999</i>	supervisor, manager	Headquarters Performance Management System, DOE
<i>Management Academy for Public Health Competencies March 1999</i>	public & private sector manager	Management Academy for Public Health (MAPH), North Carolina Institute for Public Health (CDC, HRSA, Kellogg, RWJ funded); Stephen Orton
<i>Competency Profile: Public Service Managers</i>	middle-managers	The Learning Centre, Profile for Leaders and Managers, Public Service Commission, Canada
<i>Public Health Prevention Service Competency Set, September 1997</i>	MS-prepared entry-level manager	Public Health Prevention Service (PHPS) Fellowship, CDC (to be updated fall 2001)
<i>Competencies for Professional Development: Managing in the Middle 1998</i>	mid-level manager	Exploring Inspired Leadership, The Banff Center

Table of Contents

Executive Summary	1
Introduction	4
Environmental Scan	6
Background	8
Needs Assessment.....	11
Definition	12
National Center for Environmental Health Model of Core Competencies.....	21
Barriers to Achieving Core Competencies.....	24
Developmental Process.....	26
Concluding Remarks	28
Appendix A: List of Materials Reviewed	29
Appendix B: Core Competencies Steering Committee Members	32
Appendix C: Strategic Planning Framework	33
Appendix D: Traits and Characteristics of an Effective Environmental Health Practitioner	34
Table 1: Cross Cutting (Core) Competencies for Public Health	35
Table 2: Comparison of Core Functions Within the Global Health Protection Framework	36
Table 3: Collection of Competency Sets of Public Health-Related Occupations and Professions	37