

Health Professionals Task Force 5 Year Report:
Accomplishments in Fulfilling their Obligations

Under their Mandate

Provided to Them by the IJC, June 2000

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Health Professionals Task Force

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Introduction

The Health Professional Task Force (HPTF) is comprised of health professionals with current expertise in clinical and public health issues in the area of environmental health, with particular focus on human exposure to toxic and persistent toxic substances in the environment. Established in 1995, the HPTF has advised the Commission and made recommendations on environmental health issues along the Canada – U.S. boundary (see Appendix A – Backgrounder and Terms of Reference). The Task Force has supported collaborative work of the Commission and its boards in a number of areas and promoted an exchange of information on environmental health issues in clinical and public health practice. In June 2000, the Commission renewed the HPTF's mandate for another 5 years (Appendix B – Mandate).

The Task Force has met nine times over the last five years. Members have also participated in numerous international/bi-national and regional conferences/workshops, IJC biennial meetings and held two public meetings to assist the Commission and its boards in their work.

This is the HPTF's second five year report detailing their accomplishments from 2000 to 2005 in meeting their obligations under the current mandate.

Accomplishments

- *Environmental Health Surveillance* - The HPTF initiated a multi-agency sponsored conference on "*Environmental Health Surveillance: Agreeing on Basic Sets of Indicators and their Future Use*", held October 2000 in Quebec City. Proceedings of the conference and its preface penned by the IJC co-chairs Gray and Schornack were published as a supplement in the Canadian Journal of Public Health in 2002. This initiative provided a stepping stone into partnering with the Commission for Environmental Cooperation's (CEC) Expert Advisory Committee on Children's Health, Pan American Health Organization, the World Health Organization and the Governments of Canada, United States and Mexico on the development of a core set of children's environmental health indicators for North America. The final report entitled "Children's Health and the Environment in North America - A First Report on Available Indicators and Measures" is to be released in December 2005 and then updated periodically as a means of tracking progress towards the goal of improved protection of children from environmental threats in North America.
- *Children's Health and the Environment: A Clinician's Conference*- the conference was held in Chicago, April 2002. It was initiated by the HPTF with support from the Great Lakes Centers for Occupational and Environmental Safety and Health of the University of Illinois, School of Public Health and was designed to increase the knowledge and skills of family physicians, pediatricians, obstetricians, school and nurse practitioners and public health practitioners about environmental impacts to children's health. There were approximately 60 registrants, including representation from the CEC. Chair Gray provided the keynote address. A similar conference by the Ontario College of Family

Physicians was held October 2003 in Toronto where HPTF members and our HPTF Environmental Health Scholar took the lead in running workshops. Chair Gray again provided the keynote address.

- *Great Lakes Fish Consumption Advisories* - The International Joint Commission (IJC) in its tenth Biennial report committed to give further consideration to the issue of fish consumption advisories. At the request of the Commissioners, the Health Professionals Task Force (HPTF) prepared a discussion paper entitled “*Great Lakes Fish Consumption Advisories: The Public Health Benefits and Risks*” to stimulate a review of the current approaches to advising the public about fish consumption in the U.S. and Canada. The paper examined the public health issues arising from fish consumption advisories that continue to exist in all jurisdictions throughout the Great Lakes basin. The Task Force reviewed recent literature on human toxicants and their biologic effects along with data on human consumption patterns of Great Lakes fish, and fish contaminant levels for mercury and polychlorinated biphenyls. Additionally, verbal and written testimony from public health experts, state and federal regulatory agencies, environmental organizations and concerned citizens from both countries were considered.

The fish consumption advisories were also reviewed and several of the current approaches used were assessed with the objective of providing guidance to the Commissioners. The HPTF in its review of fish consumption advisories also sought to provide guidelines to the IJC to improve the effectiveness of fish advisories, particularly for at-risk populations.

The discussion paper was published in January 2004 and made available on the IJC website. Several hundred copies were made available at the 2004 National Forum on Fish Contaminants conference in San Diego.

- *EnviroHealth Symposium* - In June 2003, the IJC held an EnviroHealth Symposium to facilitate Commission discussion and information sharing with IJC Board and Task Force health experts and invited guests. The concept for the symposium grew out of an April 2002 gathering of health advisers from the IJC’s Science Advisory Board’s Ecosystem Health Workgroup, the Health Professionals Task Force, and the International Air Quality Advisory Board [(Dr. Peter Orris (HPTF), Dr. David Carpenter (SAB), Dr. Alan Abelsohn (HPTF), Dr. Michael Brauer (IAQAB), Dr. Paul Liroy (IAQAB), and Dr. Milton Clark(SAB)] as a means to assist the Commissioners in addressing health issues of greatest interest or relevance to the IJC’s health mandate.

The EnviroHealth program included plenary discussion sessions with a number of IJC health, science, and technical experts that informed the Commission on important health issues relevant to its mission. It featured topics included “Linking Diseases and Pollutants (Causality, Epidemiology, and Risk Assessment)” that provided participants an opportunity to better understand the science and art of risk assessment, particularly in its application to assessing health threats to children. Also during the program, the transport, fate, and health impacts of mercury as a case study were addressed. The symposium also featured

an overview of priority health issues including a thumbnail sketch of both traditional and hazardous air pollutants, as well as persistent toxic substances. Participants also considered the ever present threat of “Microbiological Agents: Pathogens, Bacteria, and Algal Toxins” and lastly, participants had the opportunity to hear the latest thinking on “What Can We Say About Health Changes in the Great Lakes as a Result of their Ongoing Cleanup”.

- *The Environmental Health Scholars Program (EHSP)* - formerly known as the Great Lakes Scholars Program, began in 1995 in collaboration with the Association of Occupational and Environmental Clinics (AOEC) and The Agency for Toxic Substance and Disease Registry (ATSDR). With support from the International Joint Commission’s Task Force since 2003 the EHSP has supported one scholar in Canada (Dr. Cathy Vakil) and two scholars since 2004 in U.S. (Dr. Steven Kirkhorn and Nurse Mary Johnson). Sustained funding from Canadian and U.S. health agencies has been episodic over the years. The AOEC and the EHS have utilized IJC funding to promote curriculum change, instruct medical, nursing, medical faculty and practitioners on the effects of environmental contaminants on health, developing and evaluating case histories, and treatment approaches. A letter acknowledging their appreciation and accomplishments was provided. Members of the HPTF and AOEC are proposing the continuation of support for the Program.

The goals of the program are:

- To raise awareness of environmental/occupational health problems among health professionals as well as medical and nursing students.
- To increase the knowledge of health care professionals to effectively manage possible health effects due to community exposures to local Superfund/hazardous waste sites that could be in Areas of Concern.
- To secure an understanding by health professionals of how and when to take an environmental and occupational exposure history.
- To serve as an occupational and environmental medicine resource/contact for academicians and primary care physicians.
- To stimulate the interest of medical and nursing students to pursue careers in occupational and environmental medicine.

The EHSP has three targeted audiences for educational interventions that serve as the foci for the scholars: undergraduate and graduate students (both nursing and medical students) along with medical residents, school faculty, and practicing physicians and other healthcare providers in the community.

- *Health Effects Review* - In 1995, the first issue of the newsletter “**Health Effects Review**” was published. Over the last five years, under the direction of the Task Force fifteen new “Health Effect” reviews have been prepared in collaboration with and under contract to the Department of Environmental Health, Boston University School of Public Health under the direction of the Task Force. These timely scientific literature reviews look at various human health effects and environmental

pollutants relevant to the Commission's on-going work across the boundary with an emphasis on pollutants of concern with the Great Lakes basin.

Distribution has mainly occurred through the IJC web site, electronic email list and by members of the HPTF and the Secretary at environmental health conferences they have attended. (Appendix C – Summary list of the Health Reviews).

- *Human health and the Agreement* - The HPTF workplan identified a work element to examine human health and the Agreement. This grew into a cross-board collaboration effort after the co-chairs of the Health Professionals Task Force and the Science Advisory Board's Work Group on Ecosystem Health met in Chicago in March 2005 to consider ways to assist the Commission in its review of the Great Lakes Water Quality Agreement (the Agreement) with respect to human health. Following this meeting, the Agreement Boards, the Council, the International Air Quality Advisory Board and the Health Professionals Task Force were solicited for their interest in forming an ad-hoc Health Advisory Group (HAG). At the Kingston 2005 biennial meeting, the HAG adopted the Terms of Reference and proposed a set of questions to further solicit comments from its membership on the role of health and the Agreement. The HAG membership have produced a draft interim report with general and specific comments with respect to the characterization of human health in the existing Agreement and identified recommendations to enhance human health considerations in any future revision of the Agreement.
- *Health Impact Assessment Web Course* - This project was a joint World Health Organization(WHO)/Health Canada(HC)/IJC HPTF initiative to mount a first self-administered web based course on Health Impact Assessment (HIA) targeting a professional clientele and which builds on the Canadian Handbook for Health Impact Assessment and other international resources. This initiation course will be free for participants, enabling access to a maximum number of clients around the world through hyperlinking on WHO, HC, IJC and other websites. The intended audience includes decision-makers that need to familiarize themselves with the concept of HIA and its various benefits and implications, as well as health and environment practitioners wanting to get access to resources in the domain. Special attention has been paid to indigenous peoples' preoccupations in the development of the course. The link to the website is <http://machaon.fmed.ulaval.ca/medecine/hia/home.asp>

Public Meetings

- Vancouver, 2002 - The HPTF with the support of Dr. Michael Brauer of International Air Quality Advisory Board (IAQAB), held in its first public meeting in the Western region in Vancouver, September 2002. Approximately 50 people participated by raising a number of regional concerns. Subsequent to this

meeting a document was developed the IAQAB/HPTF on the status of the SE2 proposal, current information on air quality in the region, and a summary of the concerns expressed at the public meeting. The Commission forwarded the document to Governor Gary Locke of Washington State and British Columbia's premier Gordon Campbell and published it to the IJC website.

- Ann Arbor, 2003 - At the IJC's 2003 biennial meeting on Great Lakes Water Quality, in Ann Arbor MI, the Task Force organized a half day workshop on Great Lakes fish consumption advisories using the draft of the discussion paper developed for the Commission on Great Lakes Fish Consumption Advisories- The Public Health Benefits and Risks.
- Windsor, 2004 – The HPTF held a public meeting inviting comment on human health issues related to transboundary environmental concerns in the area. Approximately 35 people participated in the 2 hour meeting by raising a number of concerns regarding transboundary air quality in the Detroit Windsor area. Other issues raised included spills, drinking water, monitoring, policies and governance.

Other Initiatives

- Environmental Health Training for Poison Control Specialists
- Clinical Screening Tool for Environmental Health Problems
- Distributing Curriculum Modules – “Environmental Health in Family Medicine”

Background on the Creation of the Health Professionals Task Force

The Commission in 1988 wrote to the Parties concerning its review and approval of its “IJC Policy Statement on Its Approach to the Revised Great Lakes Water Quality Agreement”. It identified areas of work that will be subject to continued, increased or reduced effort by the Commission, its Boards and the Regional Office. One area which was to continue to receive emphasis by the Commission was ‘human health dimensions of all programs’.

In the early 90’s the Commission was learning of the impacts of persistent toxic substances and other chemicals in the environment on the normal development of fish and wildlife populations in the Great Lakes and, by extension, on the long-term health of humans, who consume these resources. Increasing evidence of health impacts was being reported, yet there appeared to be limited knowledge among health professionals of these problems and their implications for clinical practices.

The Commission held two Roundtables in 1994, bringing together key leaders and policy advisers of health care professional schools, associations and governmental agencies to develop a strategy for better informing health professionals about health-environment issues. The consultations looked at increased professional capacity, through training and continuing information, to identify, prevent and treat environmentally-related health problems, particularly those associated with exposure to PTS’s in the environment.

The clear message from participants at the roundtables was there were deficiencies in environmental medical education and clinical practice in both countries. These deficiencies were manifested in 3 ways.

- Failure of primary caregivers to recognize environmental exposures as the cause of clinical presentations, e.g., failure to recognize gastrointestinal or neurological complaints as related to lead exposure;
- Failure of primary caregivers to give preventative advice to their patients with respect to chemical exposures e.g., simple protective measures against pesticide exposure for farmers or the risks of using paint strippers in the home for cardiac patients; and
- Expectation of many patients to have their questions with respect to environmental exposures answered by their primary caregivers, who simply do not have the answer or the information at hand.

Recognizing, these deficiencies and the difficulties key agencies were experiencing at the time with budgeting and staffing cuts the Commission took a leadership role in establishing the Health Professionals Task Force in April 1995 using the following Terms of Reference.

HEALTH PROFESSIONALS TASK FORCE
TERMS OF REFERENCE

Approved by the Commission June 8, 1995

Health Professionals Task Force will comprise health professionals that maintain a current awareness about emerging clinical and public health issues and information pertinent to human exposure to environmental contaminants, particularly toxic and persistent toxic substances;

Specific Responsibilities of the Health Professionals Task Force are to:

1. consult or otherwise be familiar with a wide range of human health professionals and organizations to develop the required information and encourage international information exchange;
2. inform the Commission of pertinent developments in professional practice and public health policy and report at least annually to the Commission at a semi- annual meeting;
3. advise the Commission concerning the adequacy and scientific credibility of environmental health knowledge and education currently being provided to health professionals;
4. make recommendations to the Commission concerning ways in which the communication of current environmental health knowledge and information could be made more effective; and
5. make recommendations to the Commission concerning matters that might be forwarded to the Governments of Canada and the United States pursuant to Boundary Waters Treaty of 1909.

HEALTH PROFESSIONALS TASK FORCE

Mandate

Approved by the Commission June 7, 2000

The Health Professionals Task Force will be made up of health professionals who maintain a current expertise in clinical and public health issues in the area of environmental health, particularly expertise pertinent to human exposure to toxic and persistent toxic substances in the environment. The Task Force will assist and support the work of the Commission, its Boards and Task Forces on transboundary issues related to environmental health by providing information and advice in support of their work.

Specific Responsibilities of the Health Professionals Task Force are to:

1. to promote an exchange of information on current transboundary environmental health issues in clinical and public health practice with a wide range of human health professionals and organizations;
2. to inform the Commission, its Boards and Task Forces concerning the scientific credibility of transboundary environmental health information currently being provided to health professionals and the public;
3. to inform the Commission, its Boards and Task Forces concerning the adequacy of environmental health training and education currently being provided to health professionals;
4. to inform the Commission, its Boards and Task Forces of pertinent developments in professional practice and public health policy;
5. to provide transboundary environmental health information based on its work to the public;
6. to make recommendations to the Commission concerning ways in which the communication of transboundary environmental health knowledge and information could be made more effective;
7. to advise the Commission about emergent clinical and public health issues in the area of transboundary environmental health;
8. to make recommendations to the Commission concerning transboundary environmental health matters that might be forwarded to the Governments of Canada and the United States pursuant to the Boundary Waters Treaty of 1909.
9. to report at least annually to the Commission at a semi-annual meeting.

The Task Force shall meet at least twice a year. The Board will schedule regular times for its meetings well in advance so that members can make the necessary arrangements in their schedule to attend.

Summary List of Health Effects Reviews

Under Review by HPTF

1. Health effects from disease emissions
2. Environmental health issues for First Nations/Native Americans along the Canadian/US Border

Published Reviews on the IJC Website – HPTF Home Page

Methylmercury Revisited (Fall 2005) - Methylmercury (MeHg) is a neurotoxicant with well-defined neuropathological and developmental effects. Seafoods, including tuna, are often contaminated with MeHg. This has raised questions about the safety of consuming such foods, especially for high-risk populations, including pregnant women and children. The concern about MeHg contamination has raised vigorous discussion of the nutritional benefits of seafood consumption versus risks associated with MeHg exposure. A summary of the existing studies and known effects of MeHg appeared in Volume I of this publication in 1996. In the intervening 8 years, several studies of populations of children exposed to MeHg in utero and during development have published new data, and updated reference doses for exposure to the toxicant have been proposed. In addition, new data have appeared linking MeHg exposure in adulthood to cardiovascular risk factors. In this summary, we will review the data that established MeHg as a neurotoxicant, provide an update on the newest findings on health effects of MeHg, and summarize the debate on the optimal reference dose for MeHg exposure.

Gene-Environment Interactions (Summer 2005) – This report looks at the biological significance of gene-environmental interactions and their implications for society and public health.

Perfluorinated Compounds (Spring 2005) – Perfluorinated compounds (PFCs) are persistent and bioaccumulative chemical with a broad range of industrial and consumer applications. They have been used as surfactants and surface protectors in the manufacture of plastic, electronics, textile, and construction material for over fifty years. Common products that contain PFCs include floor polishes, shampoos, carpets, upholstery, and fire-fighting foams. This report summarizes studies of human exposure levels and their potential health effects related to PFOS and PFOA two of the mostly widely detected degradation products of PFCs.

Polybrominated Diphenyl Ethers (PBDEs) (Fall 2004) - PBDE levels in humans throughout the world have been increasing for several decades. They are persistent and bioaccumulative compounds used as fire retardants in polyurethane foams, plastics, and textiles. Common products that contain PBDEs include furniture cushions, carpet backings, electrical insulation, and computer and television casings. This report summarizes the routes and levels of human exposures and policies of countries in addressing this issue.

West Nile Virus - Summer 2004 – Arboviruses (arthropod borne viruses) are a group of viruses that infect humans and spread disease via the bite of blood sucking arthropod vectors, such as mosquitoes and ticks. There are many viruses in this group, some causing diseases like the well known dengue and yellow fever, while others cause more exotic sounding diseases such as o'nyong-nyong fever. This is a diverse group of viruses whose common feature is transmission by the bite of a mosquito. This report reviews West Nile and other Arboviruses and the status of infections to date.

The Effects of Phthalates on Precocious Puberty in Girls (Spring 2004) -

Environmental contaminants have also been implicated in altering the timing of natural sexual maturation. The chemical phthalate esters is ubiquitous in the environment, and exposure can occur via ingestion, inhalation, and dermal absorption. Although human data is limited, experimental studies have shown that these chemicals can cause female reproductive toxicity in exposed laboratory rats. The report describes phthalates and summarizes the results of studies investigating the association with precocious puberty.

Environmental Risk Factors for Asthma in Children (Winter 2003) - Asthma is the leading chronic disease of children in industrialized countries. Although the disease process is not completely known, an essential feature is the characteristic inflammation of the bronchial tube. Common factors that contribute to the occurrence of asthma are exposure to outdoor air pollutants, tobacco smoke, and allergens. This paper describes in detail the factors that contribute to asthma in children and discuss measures to prevent exposure to environmental triggers.

Risk and Benefits of Drinking Water Disinfection (Fall 2003) - Drinking water safety continues to be a major public health concern throughout the world. In recent years, the public health concern over drinking water has shifted. Although infectious disease will never cease to be an important issue, the attention of agencies such as the U.S. Environmental Protection Agency (EPA) and Health Canada is now focused on health risks of drinking water disinfection by-products (DBPs). This paper discusses the risks and benefits of drinking water disinfection on public health.

Environmental causes of Blood-related Cancers in Children (Summer 2003) –

Leukemia and lymphoma are caused by injury to the DNA of blood cells. Although the exact origin is unknown, environmental factors have been implicated as a possible cause of these childhood blood-related cancers. Despite the advances made in epidemiological methods over the past decade, no environmental association has been strong enough to entirely explain the occurrence of haemopoietic cancers in children. This paper summarizes the studies that investigate the associations between environmental exposures and lymphoma or leukemia. We focus on four commonly encountered potential causes: ionizing radiation, organic solvents, electromagnetic fields, and pesticides. The methods and results of these studies will be reviewed.

Environmental causes of Brain Cancer in Children (Spring 2003) - Brain cancer is one of the most prevalent childhood cancers in the United States and Canada, second only to leukemia. The etiology of childhood brain cancer remains largely unknown. While scientists suspect environmental causes are associated with childhood brain cancer, the evidence is not conclusive. This paper summarizes possible environmental risk

factors and the strength of their association with childhood brain cancer. Potential environmental risk factors include pesticides, electromagnetic fields, and N-nitroso compounds.

Pesticides and Parkinson's Disease (Winter 2002) - Parkinson's disease (PD) is the second most prevalent neuro-degenerative disorder after Alzheimer's disease, and its incidence increases with age. The etiology of PD remains elusive and is likely diverse. This paper summarizes recent studies that have focused on environmental factors and gene-environment interactions as potential causes.

Pharmaceuticals in the Environment (Fall 2002) - Concerns about environmental contaminants has widened to include not just persistent organic pollutants like pesticides (POPs) but pharmaceuticals and personal care products (PPCPs) as well. PPCPs encompass a broad class of chemicals, ranging from over-the-counter and prescription drugs, to sunscreen and fragrances. Unlike priority pollutants, most PPCPs are not lipophilic, so they do not bioaccumulate in the environment. While not persistent in terms of a long half-life, these chemicals are constantly entering the environment, resulting in long-term exposure for the aquatic ecosystem. Little is known about the toxicology of these compounds in aquatic ecosystems, but there is enough concern to warrant a proactive response. Too often, regulatory changes for chemicals in the environment are implemented in response to a problem. This paper explores PPCPs' potential for human health effects.

Health Effects and Climate Change along the Canadian-US Border Region (Summer 2001)- Climate changes include temperature change on global, regional, and local scales, and changes in the average and frequency of rainfall, winds, and ocean currents. Health effects of climate change range from direct impacts like heat stroke to more complicated associations with water- and food-borne diseases. This paper reviews temperature related illnesses, indirect health effects and extreme weather events along the Canadian U.S. border region.