Coastal Community Health

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Background

The health of coastal populations is directly linked to the health of the world’s oceans, to the quality of work environments, and to a variety of socio-economic determinants of health including access to health services. This panel brings together a number of nationally and internationally recognized health and social science specialists in community epidemiology, health promotion, occupational health, sustainable development and coastal community development. The panelists will share their experience and insight with respect to community based health initiatives which have been designed, developed and “driven” by coastal communities in Canada and internationally. The panelists will share examples of community alliance for health research projects (CAHR and CURA projects funded by the Canadian Institutes for Health Research, Social Sciences and Humanities Research Council, etc.) as well as social mapping, including GIS models of health promotion which are pioneering new approaches to community epidemiology.

A preliminary literature review of the health of the blue planet and coastal communities also indicates the need for systemic long term monitoring of coastal environments to assess the cumulative effect of chemicals and pollutants on fish an, shell fish, and sentinel species such as birds and marine mammals. Adverse impacts on human health can be both direct and indirect, and include bioaccumulation of toxins as found in many species, including human breast milk. Sources of pollutants include organic waste, heavy metals, PCB’s, etc. The effects of long distance transportation of pollutants, in air, soil and water, are present in the human food chain and are also well recognized in harbour porpoises, seals and belugas, and sea birds. In addition, in terms of occupational health, Canada has an obligation to address the environmental health problems facing residents and workers who derive their livelihoods from coastal industries, including post harvest technology, artisanal and commercial fishing, oil and gas drilling, etc.

The psychosocial and mental health status of coastal community populations has been impacted by the adverse effects of natural resources depletion and industry closures. Seasonal employment, and the search for economic security have become subject to increasing uncertainty, particularly for those employed in fish processing and harvesting industries. Health services must often focus on a smaller and aging population and access to health services is a concern in remote areas and geographic isolation.

In terms of environmental impact, Environment Canada’s Status Report on the Canadian Marine Environmental Quality: Health of Our Oceans (Wells and Rolston eds. 1991) provides a significant benchmark on the state of Canada’s coastal environments – and a point of reference for present and future research. This report presented a comprehensive overview of pollution sources, specific substances, geographic concerns and assessments. In the decade since the Health of Our Oceans report, researchers, policy makers and the public at large have expanded their appreciation of the fragility and vulnerability of coastal environmentals and the potential for deleterious impact on human physical and mental health. The authors’ quotation of Rachel Carson remains ominous: “It is a curious situation that the sea, from which life first arose, should now be threatened by the activities of one form of life. But the sea, changed in a sinister way, will continue to exist; the threat is rather to life itself.”

Panel Presentations

The first session will focus on case study presentations on the health of coastal communities by panelists followed by discussion. The second session will identify gaps in the literature and will provide recommendations for future research.

Chair: Carol Amaratunga is a professor of women’s health at the Institute of Population Health, University of Ottawa. Prior to joining the University of Ottawa in 2003 as Chair in Women’s Health Research, Carol was the Executive Director of the Atlantic Centre of Excellence for Women’s Health, a partnership program of Dalhousie University and the IWK Health Centre. She is also a past Director,
Neal Andersson – Dr. Neil Andersson is the Executive Director, CIET International. An international non-governmental agency, Dr. Andersson will present a GIS mapping model with examples to demonstrate new frontiers in community epidemiology in coastal communities in Canada and internationally. CIET operates in rural and coastal communities in the developing world and in Canada. CIET provides services and support in community epidemiology. CIET International has over 1000 program staff working in Africa, Latin America and Canada. According to the CIET’s website (www.ciet.org), and as a matter of policy, CIET promotes the full participation of both women and men in local fact finding and problem solving for evidence based planning. CIET has five standard steps to build the voice of women and men into planning and governance: the first is to analyze all existing data in terms of gender; second is to stratify all responses by sex of the respondent; third is to organize focus groups for survey design, interpretation of results and development of strategies for change; fourth, gender is made a specific factor in all analysis of risk and resiliency, which is the epidemiological backbone of CIET methods; and fifth, logistics of fieldwork are configured to maximize women’s participation. While these 5 steps are applied to all CIET activities, some projects have more gender focus such as in the Wild Coast, South Africa, a baseline survey documented ways women can play a more important role in local economic development.

Elizabeth May has been the Executive Director, Sierra Club of Canada since 1989. A non-profit organization dedicated to sustainable development, the Sierra Club is dedicated to the development of a diverse, well trained grassroots network that is devoted to protecting global ecosystems. Elizabeth is an internationally renowned writer, activist, and lawyer. She is a member of the Bar of Ontario and Nova Scotia. In 1986 she was appointed Senior Policy Advisor to the Federal Environment Minister, Tom McMillan. While she held the post, several national parks were created; as well, new legislation and pollution control measures were drafted. Throughout her career, Elizabeth May has been concerned with natural resources management, sustainable development, and protecting global ecosystems, including Canada's marine environments. In 1999, an anonymous donor endowed the Elizabeth May Chair in Women's Health and the Environment at Dalhousie University. The donor named the Chair after Elizabeth May in honour of Elizabeth's contribution to the environment of Canada. In 2000 Elizabeth May received an honorary doctorate degree from Mount Saint Vincent University in recognition of her lifetime work and commitment to the environment. Elizabeth will discuss her work and publications, including Paradise Won; the struggle for South Moresby, At the Cutting Edge: the crisis in Canada’s forests; and her work on the Nova Scotia tar ponds.

Barbara Neis is Professor of Sociology, Memorial University. Barbara is co-director of SafetyNet, a Community Alliance on Health and Safety in Marine and Coastal Workplaces at Memorial University, St. John’s, Newfoundland. Dr. Neis has researched many different aspects of the Newfoundland and Labrador fisheries and has recently begun linking that research with international fisheries developments. Her current areas of research focus include occupational asthma to snow crab and fishing vessel safety (funded by CIHR), the human impacts of restructuring in the Newfoundland and Labrador fisheries (funded by Health Canada, the National Network on Environments and Women’s Health, SSHRC and NSERC), and local ecological knowledge and science (funded by SSHRC and NSERC). In addition, she is part of a team of researchers exploring the relationship between gender and globalization within fisheries, funded by SSHRC. Barbara’s presentation will document some of the occupational health issues associated with industrial shifts triggered in part by failed fisheries resource management. More specifically, she will present the results of recent and ongoing research related to occupational asthma to snow crab and fishing safety as these relate to environmental and industrial restructuring within the fisheries of Newfoundland and Labrador.

Malcolm Shookner is the Coordinator, RCIP Project, Atlantic Health Promotion Research Centre, Dalhousie University. Malcolm has extensive experience in community development, health promotion and social policy. He has been active in anti-poverty, human rights and health communities’ movements in Canada and internationally, and has authored an inclusion lens framework for Health Canada. Malcolm’s presentation will focus on the Rural Communities Impacting Policy (RCIP) project, a partnership between Coastal Communities Network of Nova Scotia and the Atlantic Health Promotion research Centre. The goal of the RCIP is to increase the ability of rural communities to use social science research to influence policy that provides tools, resources, and strategies that communities can use to influence policy. Selected policy issues affecting rural and coastal communities will be highlighted in the panel.

Current research
Current coastal community health research shows many cooperative efforts involving academic research, NGO's and communities. Interdisciplinary research is very active in the “Coasts Under Stress” 5-year Project, begun in 2002 and funded by the Social Sciences and Humanities Research Council of Canada (SSHRC) and the Natural Science and Engineering Research Council of Canada (NSERC). The University of Victoria and Memorial University of Newfoundland administer the Project, with additional funding from participating universities and partners in government, business, non-governmental organizations and First Nation groups.

The SafetyNet project at Memorial University is a Community Alliance for Health Research with major funding from the Canadian Institutes of Health Research (CIHR). This comprehensive research program studies occupational health and safety of marine and coastal work. Research projects in progress at SafetyNet include studies on occupational asthma in crab workers, occupational health and safety in petroleum refining and health implications of offshore employment. In Nova Scotia and in B.C., there are Coastal Health network projects that address environmental issues and issues of community co-management of resources.

The international organization, CIET (Community Information and Epidemiological Technologies) is an international group of epidemiologists and social scientists who bring scientific research methods to local government and community levels. A two-year pilot project (CIET 1999) in Eastern Canada reported on the application of CIET epidemiological methods for local evidence-based health planning.

Studies are being done on environmental contaminants and effects on health, human and animal of coastal communities (Muckle 1998; Harris, 2003, Khan 2003). In particular, studies of First Nations communities (Ayotte et al 2003) are examining the appearance of chemical contaminants in human breast milk.

Interdisciplinary studies have been conducted on harbour pollutants on both coasts of Canada (Watson 2004) and initiatives are being made to begin clean up of long-standing harbour pollution problems. (St. John’s Project, 2003)

On the global scene, the spread of communicable diseases such as HIV/AIDS in costal areas has received attention. There are implications for tourism and marine traffic.

Other researchers have examined the impacts of industry closure and natural resources depletion on the health of coastal communities, with particular focus on women’s health. (Gien, 2000; Murray, 2003). A growing body of literature (Veenstra 2003) is exploring the relationships between economic inequalities and inequalities in health. This is an important area of research, with the decline of traditional resource-based industries in coastal areas, and the rise of other industries such as oil exploration and tourism.

**Future research**

There are as yet gaps in social policy research and questions to be addressed. A seminal work in this area is:


There is also an ongoing need for studies to assess the environmental impact of urban drainage and runoff, community and occupational health risks associated with intensive aquaculture and fish processing, sewage and industrial farm effluents, pulp and paper mills, oil refinery discharges, oil and gas drilling, and industrial/shipping accidents.

In terms of ongoing monitoring of marine environmental quality (MEQ) there is a need for greater collaboration with the health research sector to ensure a better understanding of the long-term effects of contaminants on human development and marine ecosystems, particularly the human food chain. Issues here include:

- The effect of sewage and industrial farm effluents on the contamination of fish/shellfish and the relationship to enteric disease.
- Systematic long-term monitoring of cumulative chemicals, e.g. PCB’s, mercury, hydrocarbons from drilling, organochlorides in fish, shellfish, seabirds and other sentinel species.
- The need for a GIS health atlas of coastal regions e.g. community-based epidemiology, as in the projects of CIET International
- Mapping of closure (fish/shellfish) sites
- More studies to assess urban drainage and runoff, atmosphere, transport, and river discharges
- The environmental impact of intensive aquaculture on marine and coastal environs
- Long-term monitoring of heavy metals and contaminants in sentinel species, sea mammals such as porpoises, seals, belugas and birds

Contingent with environmental monitoring, there is a need to engage coastal communities to utilize a variety of social accounting, community health indicators, and community epidemiology methods, e.g. GIS methods, and to prepare health atlases of coastal regions in order to map community health status as reflected in closure of fish/shellfish sites, urban damage and farm runoff, and atmospheric transportation.

In closing, there is a growing body of literature which examines the health of coastal communities. With demand and impetus for community involvement and participation in coastal management systems, research funders and granting councils are recognizing the merit of bridging the social and physical sciences. The following references are not intended to be exhaustive, but rather to provide additional sources of information on coastal community health, and to stimulate an appetite for new research.

**Questions for workshop discussion**

How can we foster participatory and transdisciplinary health research which engages the four great research cultures of the academy, communities, public policy, and clinical domains?

What are the lessons learned to date from past and present community based and participatory action research projects and programs?

What are the major research gaps and how can these be addressed?

What are the best avenues to promote knowledge transfer and uptake to policy audiences at community, provincial and federal levels?

As Canadians, how can we participate in, and support, national and international collaboration on coastal community health?

**References**


City of St. John’s. St. John’s Harbour Clean-Up, Phase 2; project description. February 2003.


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