

British Columbia Environmental and Occupational Health Research Network

**5th Scientific Exchange and Annual General Meeting
November 20, 2009
Vancouver**

Poster Abstracts



Name	Title	Abstract
Demers, Paul; Nicol, Anne-Marie; Setton, Eleanor; Peters, Cheryl; Hall, Amy; Hystad, Perry; Hurrell, Christie; Koehoorn, Mieke; Davies, Hugh; Karlen, Barbara	<i>CAREX Canada Preliminary Exposure Estimates for Benzene</i>	CAREX Canada is a research unit based at UBC's School of Environmental Health. We have produced preliminary estimates of the numbers of Canadians exposed to benzene (a recognized human carcinogen) in both occupational and community settings. These estimates have allowed us to identify the industries, job types and geographical regions where Canadians are widely exposed to benzene. Future work will refine these estimates to provide greater detail about benzene exposure in community and occupational settings.

Name	Title	Abstract
Douillard, Jay	<i>An Interactive Web Atlas of Early Child Development</i>	The Human Early Learning Partnership is an interdisciplinary research institute located at the University of British Columbia. Each year 40,000 Kindergarten children are assessed on their social competence, emotional maturity, physical health & well being, language & cognitive abilities and communication skills & general knowledge: The Early Development Instrument. All of this data is used to monitor and study spatial disparities in children's health. Dedicated to empowering local communities, alongside our Province wide research agenda, local level maps are produced for each School District. Each wave of data requires 34 maps to cover British Columbia.

Name	Title	Abstract
Drebit, Sharla	<i>Work Related Falls in Healthcare – Who’s at Risk?</i>	British Columbia’s healthcare workers are at high risk of fall injuries. This study examines the burden of occupational falls among healthcare workers in terms of injury rates, wage loss costs and number of days lost by workers’ demographics. Fall incidents over a three year period for a large health region in BC were examined. Records were extracted the WHITE database and productive hours were obtained from payroll data to compute incident rates. Compensation claims and days lost were obtained from WorkSafeBC. This research highlights the need for falls interventions and provides the health authority and policy makers with information that can be utilized to reduce risk factors that lead to fall injuries.

Name	Title	Abstract
Fan, Jonathan; McLeod, Christopher; Koehoorn, Mieke	<i>Sociodemographic, clinical, and work characteristics associated with partial, full, or no return to work following work-related knee surgery</i>	This study examined the association between return-to-work (RTW) outcomes and sociodemographic, clinical/surgical and work characteristics among a cohort of injured workers who underwent knee surgery between 2001 and 2005 in BC. Data was extracted from workers’ compensation databases. Multinomial logistic regression provided odds ratios (OR) and 95% confidence intervals (CI) for the association between RTW outcomes (partial, full, unspecified or non-RTW) and the independent variables. Women and those of lower income status had the poorest return-to-work outcomes after controlling for covariates. Physically demanding occupations had a harder time returning to work, suggesting that factors beyond clinical and surgical characteristics influence disability outcomes of workers.

Name	Title	Abstract
Fang, Mei Lan; Samra, Joti; Gilbert, Merv	<i>Immigrants, Mental Health Services and the Canadian Workplace</i>	This poster introduces the idea that, presently, gaps in the Canadian mental health system exist with respect to service delivery for employees from diverse ethnic backgrounds. Numerous studies have shown that new immigrants face a number of challenges in the workplace, such as the loss of personal and occupational identity, language barriers, discrimination, stigma, alienation, deskilling as well as competition and prejudice from native-born Canadians. As a result, immigrant workers are at significantly greater risk for a range of physical and mental health disorders.

Name	Title	Abstract
Foster, Kendra; Whiteman, Matt; Baldwin, Tamara; Dharamsi, Shafik	<i>Establishing a Sustainable Platform for Ethical International Service-Learning Practices</i>	International Service-Learning (ISL) is an increasingly popular way for students to integrate curriculum material in an applied way and to gain experience working in their chosen fields, and for faculty to engage students in international research programs. However, there are often conflicting motivations for pursuing ISL experiences. Because these opportunities are often set in vulnerable communities in resource-poor settings, they create the potential for unintentional harm and exploitation. Our aim is to enable participants to generate a level of critical consciousness that can facilitate the development of ethical norms and best practices for ISL projects.

Name	Title	Abstract
Gan, Wenqi; Tamburic, Lillian; Davies, Hugh; Demers, Paul; Koehoorn, Mieke; Brauer, Michael	<i>Change in Residential Proximity to Traffic and the Risk of Death from Coronary Heart Disease</i>	This population-based cohort study included a 5-year exposure period and a 4-year follow-up period. All residents aged 45-85 years who resided in Metropolitan Vancouver during the exposure period and without known coronary heart disease (CHD) at baseline were included into the study (N = 488,785). We found that living close to traffic was associated with increased risk of CHD mortality. Importantly, we found that change in residential proximity to traffic was associated with altered risk of CHD mortality: moving close to traffic was associated with relatively increased risk, whereas moving away from traffic was associated with relatively decreased risk.

Name	Title	Abstract
Garzia, Nichole; Cervantes-Larios, Alejandro; Nicol, Anne-Marie; Demers, Paul	<i>Surveillance of Environmental Pesticide Exposure in Canada</i>	Many agricultural pesticides are classified as “possible” human carcinogens by the International Agency for Research on Cancer (IARC). This project applied a unique exposure assessment technique to conduct surveillance on pesticide exposure. The technique estimates population exposure to 11 IARC “possibly” carcinogenic pesticides. Prevalence of specific pesticide use is determined for each agricultural area; these are used to create ‘probability of exposure’ groups. Geographic information systems connect exposure to population data providing surveillance information. For example, ~1.6 million people reside in Alberta’s agricultural areas, with ~166,000 (11%) residing in ‘high’ 2,4-D exposed areas. This information geographically identifies high exposed populations.

Name	Title	Abstract
Haber, Rebecca	<i>We will SUCCEED in Strengthening Our Neighbourhood</i>	The objective of this project was to develop a photography-mediated method to assess how environmental health inequities are experienced in Vancouver's Downtown Eastside. Residents took photographs of healthy and unhealthy places in the neighbourhood and were then interviewed about their photographs. Emergent themes outlined the neighbourhood's conditions, external influences, and changes over time. In using photographs to draw out narrative experience, participants were able to connect conditions in their neighbourhood environment, such as poor housing quality, development, and security presence, to inequities built into their social environment, such as neglect, regulation, stigmatization, and lack of community consultation.

Name	Title	Abstract
Harris, Anne; Cripton, Peter; Marion, Stephen; Tsui, Joseph; Teschke, Kay	<i>Assessments of Occupational Whole Body Vibration Exposure for a Case Control Study of Parkinson's Disease</i>	This poster summarizes the process of retrospectively assigning and summarizing whole body vibration exposure among participants in an epidemiological study of Parkinson's disease. All exposure assessment analyses were blinded to case or control status. From a total of 803 participants, we recorded 926 reports of whole body vibration exposure. Common sources of exposure included road vehicles, forklifts, and agricultural equipment. The average duration of reported exposures was 2.7 working years. We assigned vibration exposure intensity values to reported equipment types by summarizing values reported in the literature. This study highlights several challenges to retrospective occupational exposure assessment.

Name	Title	Abstract
Heaslip, Robyn; Hope, Rosalie	<i>Studying the effects of Electro-Magnetic Fields on the health and well-being of Sto:lo individuals, families and communities.</i>	The controversial and contradictory conclusions of much existing research on human health and exposure to electromagnetic fields (EMFs) make it a relevant and significant issue, specifically to those who live or work near existing transmission lines. BC Transmission Corporations's application for a proposed second high voltage transmission line that would run through Sto:lo territory, has many families concerned for their health and well-being. Our research project begins to address this concern by measuring EMF levels in Sto:lo homes, and conducting interviews and health surveys within Sto:lo communities.

Name	Title	Abstract
Jeronimo, Matthew; Barzan, Cris; Chu, Winnie	<i>Malondialdehyde in Human Urine</i>	Particulate air pollution may induce inflammation in lower airways, thereby increasing the risk of developing cardiovascular and pulmonary disease and mortality. Elevated Malondialdehyde (MDA) concentration in urine is an indicator for oxidative stress in the human body. The goal of our group is to develop a sensitive and reliable analytical method to determine the amount of MDA in human urine. The analysis is conducted using Gas Chromatography/Mass Spectrometry. All urine has a certain background level of MDA, and so multiple schemes for accurate quantification of the samples were explored, including the selection of calibration curve media.

Name	Title	Abstract
Kingwell, Elaine; Bajdik, Chris; Phillips, Norm; Oger, Joel; Hashimoto, Stanley; Tremlett, Helen	<i>Cancer risk in an untreated population of multiple sclerosis patients: Preliminary results from the Malignancy in Multiple Sclerosis [MaMS] study</i>	The potential influence of immunomodulatory drugs (IMDs) on cancer risk in multiple sclerosis (MS) cannot be assessed until baseline risk is established in unexposed patients. Cancer risk in IMD-naïve MS patients was assessed by linkage of the BCMS and BC Cancer Agency databases. Incidence of malignancy after onset of MS was compared to the age- and sex-matched incidence in the BC population by calendar year. Significantly reduced risk was found for all cancers, lung, colorectal and breast cancer in the MS cohort. Results from the MaMS analyses provide a North American reference with which to compare patients treated with IMDs.

Name	Title	Abstract
Marsden, Dawn	<i>Frameworks For Seed Planting: How Collaborative Fruit Can Grow From Seed Grants</i>	This poster will display a case study of how a BCEOHRN seed grant has been used within the Indigenous Food Sovereignty movement, through development of ideas and proposals, through capacity building, to funding of projects, to collaborative organization, to networking, and to community, national and international action. The framework for seed planting will be highlighted as a template for others to use, as a BCEOHRN success story, and as a recommendation to support grassroots projects.

Name	Title	Abstract
Moffatt, Hannah	<i>Communities Adapting to Climate Change: Emerging Public Health Strategies</i>	Local governments throughout North American are mitigating greenhouse gases and adapting to the impacts of climate change. This project addresses the question, “How does health promotion and public health practice influence municipal climate change adaptation?” The project reviewed resource materials and interviewed staff from local government and health authority “leaders” in adaptation. Results demonstrate that there is a disconnect between local health authorities and their respective municipality. The case studies illustrate the need to employ community-based strategies, recognize leaders in local governments and utilize strategic partnerships while adapting to climate change.

Name	Title	Abstract
Mohammadi, Ladan; Meech, John	<i>Confined Space Risk Assessment at Mine Reclamation Sites</i>	A method of risk assessment based on fuzzy logic has been developed to recognize risks from confined spaces. Confined space accidents occur in all industrial endeavours with much too high a frequency. While many well-understood confined space hazards still result in deaths each year, there are some less-well-recognized spaces that can become dangerous through changes in work-practices, attempts to improve design, and environmental changes. A tragic accident that occurred at the Sullivan Mine in Kimberley, B.C., in which 4 people died of asphyxiation in a sampling shed is an example of this latter case. The method can warn about future risks under changing conditions.

Name	Title	Abstract
Montoya, Christopher; Winkelman, Max; Fisch, Karmen; Wright, Mary-Doug; Gale, Shirley Pat; Landolfi, Emilio	<i>Leisure-Time Physical Activity Rates Across Canadian Provinces and Territories: A Transdisciplinary Study</i>	This study was designed to examine the effect of and relationship between Summer and Winter Olympic years on Canadian leisure-time activity levels across provinces and territories. National Surveys of leisure-time physical activity across regions within provinces and territories were compiled. Statistics Canada surveys used were conducted from 1994 to 2007. In some cases published raw data were obtained from provincial governments and relevant societies, while in others summary data were obtained from published reports. The results demonstrate significant long term temporal, sex and geographic trends.

Name	Title	Abstract
Nichol, Anne-Marie; Hurrell, Christie; Wahyuni, Desy; McDowall, William; Chu, Winnie	<i>Accuracy, Comprehensibility, And Use Of Material Safety Data Sheets: A Review</i>	Material Safety Data Sheets (MSDSs) are a key knowledge translation product, used in workplaces to communicate the hazards of chemical products. However, very little research has been done to examine whether MSDSs are effective in communicating key health and safety messages to workers. This poster describes a review of the peer-reviewed scientific literature regarding the accuracy, comprehensibility and use of MSDSs in the workplace. Articles were retrieved via a systematic search of indexes and databases, followed by hand searching and citation index searching. Two reviewers independently read and coded the articles using an iterative matrix. A number of common themes emerged regarding inaccuracies, incompleteness, incomprehensibility and overall low use of MSDSs.

Name	Title	Abstract
Nichol, Jeffrey; Barzan, Cris; Chu, Winnie	<i>Development of a Method for Sampling Aerosolized Cytotoxic Drugs</i>	The use of antineoplastic drugs is an important tool in cancer treatment; however, most of them have adverse health effects including mutagenic and cytotoxic. Cyclophosphamide (CP) is a widely used antineoplastic drug, and is a known carcinogen. Thus, occupational exposure to CP in hospitals and pharmacies is therefore a significant health risk. While a large number of studies have examined work surface contamination, airborne CP has not been investigated thoroughly. The goal of our project is to develop sensitive sampling and analysis methods for determination of airborne CP, and to accurately measure exposure to airborne CP in hospital settings.

Name	Title	Abstract
Provencher, Philip; Chu, Winnie; Barzan, Cris; Copes, Ray; Venners, Scott	<i>Measuring 2,4-Dichlorophenoxyacetic Acid by GC/MS</i>	2,4-dichlorophenoxyacetic acid (2,4-D) is one of the most used herbicide in the world for a wide range of crops, forestry, non-industrial, and lawn and turf care. Studies have found possible links of 2,4-D exposure to non-Hodgkins lymphoma and reduced sperm motility. Furthermore, IARC considers 2,4-D as a possible carcinogen. This study aims to determine a reproducible and sensitive method for measuring 2,4-D in both environmental and biological samples by gas chromatography/mass spectrometry to approximate 2,4-D exposure in the community. Investigation of 2,4-D will explore techniques for solid-liquid extraction and esterification of the free acid.

Name	Title	Abstract
Rowe, Wendy; Walinga, Jennifer	<i>Thriving, Not Just Surviving, in Complex and Stressful Work Environments</i>	The public service environment is complex, demanding, and ill-defined where, amidst high economic uncertainty and limitation, stress is inherent, continuous, and increasing. This research moves beyond the idea of merely surviving or coping with stress to learning how to 'thrive' in these non-negotiable stressful work settings. The study analyzed the adaptive strategies of mid-level managers in the public service in order to formulate a conceptual model for stress thriving at work, an issue of great significance for organizational sustainability. The study revealed key personal and organizational factors that enable stress thriving as characterized by engagement, learning, growth and sustainability.

Name	Title	Abstract
Samra, Joti; Gilbert, Merv; Bilsker, Dan; Shain, Martin	<i>Guarding Minds @ Work (GM@W): A Workplace Guide to Psychological Safety and Health</i>	This poster will introduce GM@W, a freely available, evidence-based resource that employers can use to identify and address 12 key psychosocial risk factors in their organization. It is designed to help our target audience understand the importance of promoting psychological safety and health in the workplace, and provides a step-by-step approach to implementing and evaluating effective responses. GM@W has been developed by CARMHA at the Faculty of Health Sciences, Simon Fraser University and funded by Great-West Life.

Name	Title	Abstract
Samra, Joti; van der Leer, Gerrit; Goldner, Elliot	<i>Suicide and the Workplace</i>	This poster attempts to raise awareness for suicide in the workplace. Suicidality and suicide attempts may manifest for a number of reasons. Accumulated workplace stressors may be a precursor to depression and burnout, which can elevate risk for suicide. A number of strategies are recommended for managing suicidality in the workplace. For this poster, a review of literature was conducted to highlight: key facts about suicide; factors that may increase risk of suicide in the workplace; and evidence-based suicide prevention guidelines for workplaces.

Name	Title	Abstract
Shajari, Salomeh	<i>Occupational Musculoskeletal Injury Recurrences amongst Healthcare Workers in BC</i>	This study reports on the prevalence of MSI recurrences among healthcare workers (HCWs) to identify the population most at risk. The incidence of MSI within one year of the first reported injury was recorded as a recurrence. The association of the demographic characteristics of injured HCWs and organizational factors on the prevalence of recurrence were studied. The overall prevalence of MSI recurrence was found to be 30.6%. Care aids and HCWs within Long Term Care sector were found to be at most risk of recurrence.

Name	Title	Abstract
Shaw, Alyssa; Chan, Laurie	<i>The use of platelet monoamine oxidase-B as biomarkers for mercury neurotoxic effects among Inuit in Arctic Canada</i>	Inuit communities that rely on marine traditional foods for subsistence could be at risk for Hg-related neurotoxicity. It is therefore necessary to identify reliable biomarkers that can detect early signs of neurotoxicity from chronic methylmercury exposure. This study examined whether platelet monoamine oxidase-B (MAO-B) could be a biomarker for mercury neurotoxicity. Platelet MAO-B activity was examined in 988 participants from the 2007 Inuit Health Survey. Data was used in a multiple linear regression analysis to determine predictors of platelet MAO-B activity and to determine whether there is any association between mercury and platelet MAO-B activity.

Name	Title	Abstract
Shu, Huan; Allen, Ryan; Bassil, Kate; Brauer, Michael; Piovesan, Walter; Rousseau, Roxanne; Stoodley, Jasper; Turvey, Stuart	<i>Potential sources of phthalate exposure in a Vancouver birth cohort at three months of age and socio-economic status</i>	Exposure to phthalates may contribute to the development of an inflammatory response and be a factor in the development of allergic disease through direct or adjuvant mechanisms. The Mini-CHILD project has piloted recruitment procedures and indoor environment inspections resulting in the testing and refinement of effective protocols and methods to be implemented in the <u>C</u> anadian <u>H</u> ealthy <u>I</u> nfant <u>L</u> ongitudinal <u>D</u> evelopment (CHILD Study). We have analyzed phthalate metabolites (monobutyl phthalate (mBuP); monobenzyl phthalate (mBzP); mono-ethyl <i>phthalate</i> (mEtP); mono-2-ethyl-5-oxohexyl phthalate (mEOHP); mono-2-ethylhexyl phthalate (mEHP); mono-2-ethyl-5-hydroxyhexyl phthalate (mEHHP); monoethyl phthalate (mMeP)) in urine samples from 63 Mini-CHILD subjects at age three months.