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## **Canadian Work Camps as a Setting for Health Promotion**

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### **Abstract**

With a boom in economy work camps have become common in the mining and other resource extraction industries of Canada. These places frequently experience various demographic and social disruptions. Researchers have identified potential impacts on the physical and psychosocial well being of camp dwellers. However, there is a big knowledge gap regarding appropriate health promotion tools and approaches for addressing the problematic health and social impacts associated with remote work camp settings. This article synthesizes results from existing Canadian and international research on socio environmental determinants of health and well-being of work camp workers, their families, their communities, and suitable tools for their health and wellbeing promotion. The ultimate goal of this project is to identify opportunities and ideas that work for health promotion at work camp site and how to get there. A review of relevant research literature including peer-reviewed journals, books, labour newsletters/websites,

and “popular” information from a variety of sources has been conducted. The literature review indicates various knowledge gaps, and areas for future research, for example, investigating and evaluating support for the partners of workers, strategies that improve confidence in employee assistance programs, do fly-in/fly-out structures are responsible for enabling substance abuse, and work camp operation’s implications for social issues. A setting based approach with socio-ecological lens of view can provide a comprehensive framework for health promotion in work camps. This approach enables us to recognize interactions between different health issues, and provides an opportunity to maximize the contribution of particular settings to joined-up holistic public health.

*Key words:* Work-camp, fly-in/fly-out, socio-ecological, health promotion.

## **Introduction**

Work camp is a term used to refer to the employment structure increasingly employed by firms engaged in resource extraction processes to enable development in sites geographically isolated from existing communities. In such models, work is organised on a roster system in which employees are flown in to the camp from outside communities to spend a fixed number of days working on-site followed by a fixed number of days at home [1].

With a boom in economy, work camps have become common in the mining and other resource extraction industries of Canada [2]. These places frequently experience various demographic and social disruptions. Researchers have identified potential impacts on the physical and psychosocial well-being of camp dwellers. However, research regarding appropriate health promotion tools and approaches for addressing the problematic health and social impacts associated with remote work camp settings are markedly absent from contemporary research.

This article synthesizes results from existing Canadian and international research on socio-environmental determinants of health and well-being of work camp workers, their families, their communities, and suitable tools for their health and wellbeing promotion. The ultimate goal

of this article is to identify opportunities and ideas that work for health promotion at work camp site. The model underpinning this project is “socio-ecological model” of health promotion for setting based interventions.

The key objectives of this article are:

- To outline what is known about how working in a remote work camp setting can affect workers’ health.
- To identify suitable health promotion tools for this population subgroup by comparing work camp setting with basic workplace setting.
- To identify research opportunities and priorities for future Canadian research on the health consequences and oral health promotion measures in remote work camp settings.

## **Methodology**

### **Literature Review**

A review of relevant research literature has been conducted including peer-reviewed journals, books, labour newsletters/websites, and “popular” information from a variety of sources. Search engines such as PUBMED, Google scholar, science direct, ArticleFirst and Medline, using the key words such as “fly in/fly out camps”, “worksite health promotion”, “resource extraction camps”, health and socio-environmental issues in work camp setting”, and “health promotion and occupational safety and health” were used. Other sources were identified through bibliographies of relevant articles.

### **Inclusion criteria**

- Types of publications: Research reports, articles and review papers. .
- Geographical areas: Data from numerous researches conducted worldwide.
- Language: The literature written in English language and available in full-text.

### **Exclusion Criteria**

- Articles written in languages other than English.
- Letters, editorials and conference abstracts.

### **Results**

#### **Issues in work camp settings**

- 1. Addiction and substance abuse:** Mostly the workers spend a large part of their income on alcohol and drugs. Oil/gas workers explained that frequent binges on alcohol and drugs constitute a way of ‘blowing off steam’ after work. Youths who had worked in the industry since they were teenagers informed that their entry into the oil/gas industries also provided them an entry into a drug scene, where they were surrounded by illicit drugs (including crack cocaine which was frequently used as an ‘upper’ by overtired workers) and alcohol.
- 2. Industrial diseases and accidents:** Work camp, particularly, mining is dangerous as it carries a high incidence of industrial disease and accidents such as cancers, white hand, silicosis, injuries. The “rapid review of the literature” draws the conclusion that “mining remains one of the most hazardous occupations in the world, both in terms of short term injuries and fatalities, but also due to long term impacts such as cancers and respiratory conditions”[3,4]. Additionally, employment-related mobility poses difficulty in the diagnosis, treatment, and recording of occupational illness, and access to benefits may be challenging for migrant workers after returning to their homelands.
- 3. Sexually transmitted diseases and other infectious diseases:** British Columbia (BC) is experiencing rapid in-migration of young people (mostly men) attracted by the oil/gas sectors. These jobs typically require weeks spent in isolated settings, and workers’ brief holidays in adjacent towns often involve binges on alcohol and/or drugs. This poses serious public health problems related to sexually transmitted infections (STIs), which are disproportionately high and rising among young people in BC [5]. In 2005, Chlamydia rates

4. among youth ages 15-24 exceeded the provincial average by 22% (1,168 compared with 955 per 100,000) and represented a 21% increase since 2000 [2].
5. **Non-communicable diseases:** Occupational risks play a big role in chronic diseases: 26% CVD & chronic obstructive pulmonary disease, 15% asthma and 10% cancer [3,6]. Unhealthy eating habits and high prevalence of smoking and alcohol consumption increase the risk of obesity, diabetes, cardiovascular disease, and chronic obstructive pulmonary disease.
6. **Stress and mental health:** Impacts on psychosocial well-being of miners such as loneliness due to loss of social support from extended families, depression, substance abuse, and marital relationship strain have been identified. FIFO miners reported higher levels of sleep disturbance and strain. Those with young families reported worrying about an illness or injury in the family while they were away. Missing out on time with children was considered a negative effect of FIFO/DIDO. The large body of existing literature suggests that caring social relationships, and meaningful community connections have powerful beneficial effects on health, which these camp dwellers remain devoid of [7].
7. **Social and family issues:** Fly-in/fly-out models have profound implications on women because men are disproportionately employed in this sector. Miners reported that when they were away their partners felt upset or lonely, stressed because of dealing with busy roles such as parenting alone, the challenge of changing routines, and having to managing practical tasks (e.g. mechanical repairs), which fell outside their normal role. Research suggests that fly-in camps disrupt traditional family structures and often require several adaptations within the mineworker's immediate family because of lengthy separations [8,6].
8. **Environmental issues:** Most mine neighbourhoods reside with a degraded ecosystem and some face threatening ecological disaster. Each phase of mining carries potential for causing environmental impact. These impacts may include:

- Disruption of habitat as well as harvesting and fishing activities.
- Noise pollution.
- Acid mine drainage.
- Camp garbage.
- Contamination of surface water and ground water.
- Alienation of land as a result of waste rock piles and tailings disposal areas.
- Heavy metals, organics, and sulphur dioxide emissions to air.

### **Barriers**

As a result of socio-cultural and structural factors, camp dwellers often face significant barriers to access health promotion and health care services. For example:

- Lack of awareness and limited knowledge of support services among workers [6,9].
- Lack of interest and lack of participation by high-risk employees.
- Lack of resources, funding and management support.
- Lack of proper provincial and government legislations and regulations.
- Stigma, shame, and social discomfort and privacy concerns specifically in case of STI [10-13].
- Characteristics of health service delivery systems including inconvenient hours of operation of clinics, and long waiting times [11].
- Limited physical accessibility to services provided.
- Judgemental behaviour of providers and inadequate training has also been cited.

### **Discussion**

Work camps are specific work sites with some unique characteristics. This model differs from traditional workplaces in that, daily commuting patterns are replaced by extended on/off rotation periods with accommodation, food, and vital services provided on-site. Camps are established with the intention of being temporary sites of extraction rather than permanent. Additionally, there are some other major differences between these settings such as, littlefederal and/or provincial policy oversight regulating the operation of fly-in camps and highly

disposable income of camp dwellers. However, review of literature clearly demonstrates that several health issues are common between basic workplace settings and work camps. For example, stress, occupational injuries, obesity, and infectious disease are the most common health challenges faced by workers at both settings. Additionally, as stated in result section these settings share some common barriers to health promotion as well. For example, lack of participation by high risk employees, lack of awareness among workers, lack of resources, funding and management support, stigma, shame, privacy concerns, and accessibility to health services. By comparing and contrasting these two settings (work camps/work places), we can understand that in both the settings there are three basic avenues which influence the health of workers; environment, personal resources and health practices. All these Avenues are perceived in similar manner but in different magnitude in both the settings.

### **Health Promotion tools for work camp settings**

Building upon the above-mentioned similarities in issues and barriers, and avenues of influences, we can duplicate some successful initiatives taken at other worksites to promote health in work camp settings. However, we have to modify the approaches keeping in mind the unique characteristics of work camp sites. Therefore, the key guiding principles for promoting health in a work camp setting should be:

- Meet the needs of all workers, regardless of their current level of health.
- Recognize the needs, preferences, and attitudes of different groups of participants.
- Recognize that a person's lifestyle consists of an interdependent set of health habits.
- Adapt to the special features of work camp environment.
- Support the development of a strong workplace health policy [14].

Therefore, a holistic approach for health promotion in work camp setting should include the following aspects:

### **Occupational Health and Safety**

Occupational health and safety (OHS) generally refers to efforts to reduce the physical and

chemical hazards in a work environment with the goal of reducing work-related injury, illness,



**Figure 1: Modified comprehensive health promotion model for work camp site (Health Canada, 2009)**

and disability. Implementing OHS strategies can result in significant decreases in work-related fatalities, decreased exposure to toxic substances, and an increase in camp dwellers' ability to control their environment.

### **Voluntary Health Practices**

Due to the unique feature of temporary worker residence, the work camp is an important setting in which almost any lifestyle behaviour can be addressed. Lifestyle issues may include tobacco use, alcohol and drug use, nutrition, immunization, and physical activity.

### **Organizational Change Initiatives**

Organizational change initiatives focus on changing or improving the organizational work environment. Elements of the organizational environment include leadership style, management practices, the way in which work is organized, employee autonomy and control, and social support.



### Protection of Ecosystem

Initiatives taken into action for protection of ecosystem degradation by work camp operations may include adopting green mining concept by using ecofriendly technologies, and worker education regarding environmental issues. In reality, there is an overlap between all these four categories of interventions. Therefore, in addition to considering a comprehensive range of workplace approaches, it is also important to consider a comprehensive set of health promotion strategies including awareness raising, education and skill building, environmental support, and policy development. A conceptual framework for socio-ecological health promotion model for work camp sites is presented below.

### Conceptual Framework

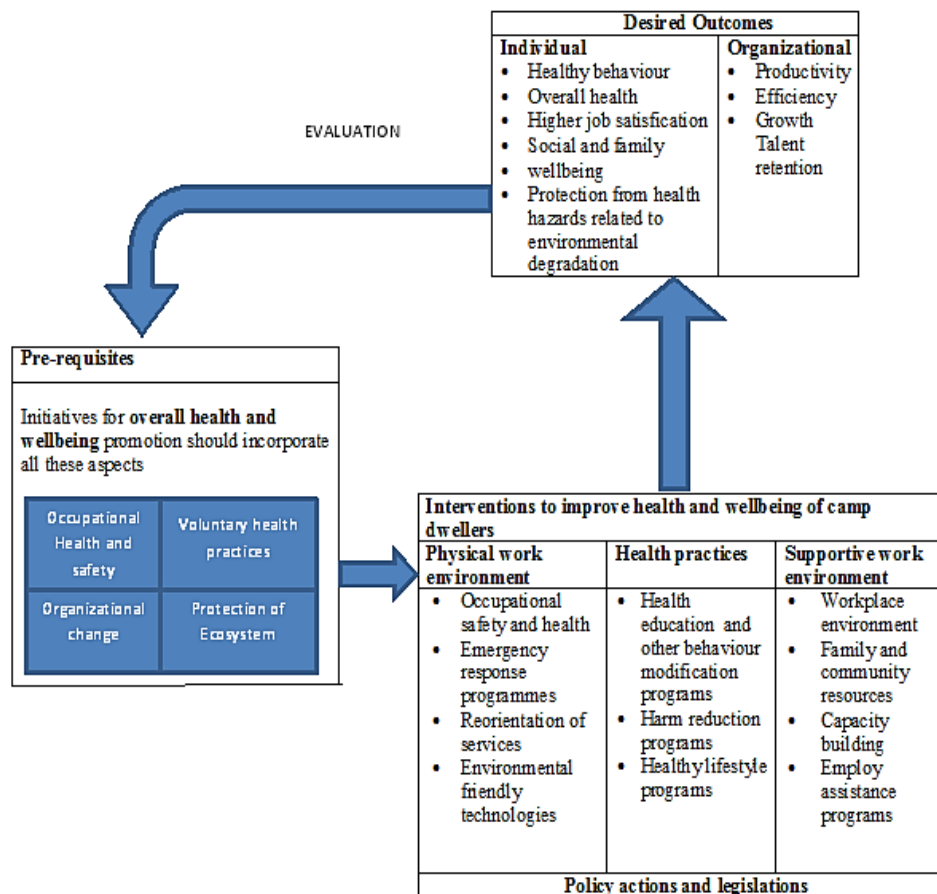


Figure 2: Conceptual Framework for Socio-ecological health promotion model for work camp sites

### **Recommendations and Areas of Future Research**

Literature review indicates various knowledge gaps and areas for future research, for example, investigating and evaluating support for the partners of workers, and strategies that improve confidence in employee assistance programs.

There is little to suggest that fly-in/fly-out structures are responsible for enabling substance abuse. It may be likely that fly-in/fly-out models are more conducive to hiring young individuals without families who are a population at increased risk of drug use. Additionally, fly-in/fly-out operations have profound implications for social issues of which many still require additional research. While they are often responsible for lower levels of community engagement, many suggest that rotation based employment which offers intermittent work is conducive to aboriginal lifestyles.

All these unanswered questions indicate the requirement of doing further research in order to bridge the knowledge gap regarding our understanding of this specific work setting. The next step after this small piece of research work should be writing position papers, conducting surveys and focus group discussions among the camps dwellers' in order to understand their perceptions of what constitutes a 'good health' and risk-taking behaviour, and to view about future health promotion initiatives in camp settings.

### **Conclusion**

Building upon Ottawa charter's statement "Taking care of yourself, community and environment"[15]. Health promotion initiatives at work camp sites can benefits everyone- individuals, families, businesses, environment and the country. The setting based approach with socio-ecological lens of view can provide a comprehensive framework for health promotion in work camps. This approach focuses outside as well as inside, discover the relationship between people, environments and behaviours, and deal with interrelationships between different groups of people within a setting. It enables us to recognize interactions between different health issues and initiatives, and provides an opportunity to maximize the contribution of particular settings to

joined-up holistic public health [16-18].

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