The Construction Work Environment: ***Chronic Musculoskeletal Pain*** *and Opioid Misuse*

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Introduction

Construction workers are frequently stressed about work-related injuries and pain. They often fail to seek help, putting themselves at risk for more injuries and mental health issues including depression, anxiety, and even suicide. Men experience the highest rates of opioid overdoses in Canada and men in the trades are overly represented by this number. Trades workers are more impacted by substance use and addiction than other fields of work. Since 2016, around three quarters of all opioid-related deaths were affected men. Of people who were employed at the time of death, 30-50% were employed in trades.[1]

In a recent report titled 'Changing Circumstances Surrounding Opioid-Related Deaths in Ontario during the COVID-19 Pandemic,' of the nearly 2,500 opioid-related deaths reported in Ontario, 30% were among people employed in the construction industry.

Industry (using the North American Industry Classification System)	Pre-Pandemic Cohort N=192	Pandemic Cohort N=264	P-Value
Construction	57 (29.7%)	78 (29.5%)	0.97
Retail trade	7 (3.6%)	15 (5.7%)	0.32
Transportation and warehousing	8 (4.2%)	15 (5.7%)	0.47
Health care and social assistance	9 (4.7%)	14 (5.3%)	0.77
Accommodation and food services	12 (6.3%)	12 (4.5%)	0.42
Manufacturing	10 (5.2%)	12 (4.5%)	0.74
Other services*	46 (24.0%)	61 (23.1%)	0.83
Other Trades**	11 (5.7%)	15 (5.7%)	0.98
Unknown	32 (16.7%)	42 (15.9%)	0.83

There are many reasons as to why men who work in trades are more affected by overdoses and substance-related harms:

- Trades work is physically demanding and stressful on the body and mind. It is common for trades workers to want to relax after work by using substances like drugs and alcohol.
- Since injury and pain are common in the trades, workers often use alcohol or other substances to cope with pain. Through seeking pain relief, this is one way people get introduced to opioids.

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[1] Men in the Trades: The Opioid Overdose Crisis in Canada (https://www.canada.ca/en/services/health/campaigns/men-construction-trades-overdose-crisis-canada.html)

- Due to the stigma surrounding this topic, men are often expected to not talk about their substance use or mental health problems. This makes them less likely to ask for help when they need it.[2]

Across Canada and in Ontario, most of the policies dealing with Opioid Use Disorder (OUD) and Opioid Overdose Deaths (OODs) have focussed on implementing guidelines that restrict opioid prescribing. While these efforts have reduced opioid prescriptions, they have not been accompanied by an increase in the availability of safe and alternative pain management options. This has resulted in a 'silent epidemic' of poorly controlled pain continuing to affect construction workers with many of them seeking help outside the healthcare system, which has led to workers engaging in self-medication.

An upstream cause rarely highlighted and given any attention by government regulators, health and safety professionals, employer associations and labour unions is the origin of pain symptoms for which individuals such as construction workers seek treatment, and the extent to which the pain can be prevented or mitigated.

This article will review how the construction work environment has contributed to the increase of OUD and OODs. Specifically, the lack of appropriate ergonomic risk controls will be examined, in addition to how ongoing chronic pain has increased the prevalence of OUD. Additionally, recommendations will be provided for potential policy developments at the government, employer, union, and insurance levels (i.e. provincial workers' compensation insurance) to address chronic pain that has led to the current levels of OUD and OODs.

Construction Workers and Chronic Pain

Relieving physical pain is the primary reason given by construction workers for using opioids and/or pain medications. There are logical interrelationships between occupational risk factors and prescription drug use. In the case of chronic opioid use (defined as using opioids most days longer over a period longer than three consecutive months) there are at least two plausible causal pathways. First, opioid use begins with sustaining a physical injury at work or experiencing cumulative trauma from strenuous labour. This can lead to pain and the subsequent use of painkillers, either as prescribed treatment or through self-medication. Secondly, the other has its origin in psychological stress from unmanageable job demands (including time pressure) or from economic, security, and job instability, leading to depression and anxiety.

In Ontario, the De Novo Treatment Centre conducted a study in 2021 titled 'The Five Drivers of Substance Addiction/Suicide' which lists the key causes leading construction workers towards substance dependency and/or suicide.

[2] Men in the Trades: the opioid overdose crisis in Canada (https://www.canada.ca/en/services/health/campaigns/men-construction-trades-overdose-crisis-canada.html)

The Five Drivers of Substance Addiction/Suicide:

	Driver	Percentage
1.	Work Habits & Schedule	44-49%
2.	Personal Relations	45-47%
3.	Stress, Anxiety & Depression	40-41%
4.	Finances	35-44%
5.	Discrimination & Abuse	24-26%

The study's results indicated that 'Work Habits and Schedule' were the leading driver (44-49%) of substance use and suicide among construction workers. The study's respondents indicated the following factors:

- Physical pain due to the kind of work involved.
- Long working hours.
- Not eating properly and not following a healthy lifestyle.
- Working in shifts causing irregular sleeping patterns and/or trouble falling asleep, feeling tired, and running low on energy.

Heavy physical work, having psychosocial work demands, excess repetition of tasks, awkward postures, and heavy lifting are known workplace risk factors for musculoskeletal pain. Prospective studies[3] suggest, that opioid overdose rates are highest among occupations with the greatest physical work demands[4] and no access to paid sick leave.[5] [6] [7] [8] A large majority of Building Trades workers do not have access to paid sick leave.

Workplace Barriers

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[3] National Research Council, Institute of Medicine. *Musculoskeletal Disorders and the Workplace: Low Back and Upper Extremities. Panel on Musculoskeletal Disorders and the Workplace. Commission on Behavioral and Social Sciences and Education.* Washington, DC: National Academy Press; 2001. [Google Scholar]

[4] da Costa BR, Vieira ER. Risk factors for work-related musculoskeletal disorders: a systematic review of recent longitudinal studies. *Am J Ind Med.* 2010;53(3):285–323. [PubMed] [Google Scholar]

[5] Dissel R. Ohio construction workers seven times more likely to die of an opioid overdose in 2016. *Plain Dealer.* November 5, 2017. Available at: https://www.cleveland.com/metro/index.ssf/2017/11/ohio_construction_workers_seven_times_more_likely_to_die_of_an_opioid_overdose_in_2016.html. Accessed August 22, 2023.

[6] Bunn T, Bush A, Slavova S. Drug overdose deaths by specific employment industry, occupation, and drug type. *J Ky Med Assoc.* 2014;112:201–211. [Google Scholar]

[7] Harik V, Janiszewski M, Allen N. Analysis of opioid-related overdose deaths on Cape Cod, 2004–2014: implications for trades/service workers and the straight-to-work population. Barnstable County Regional Substance Use Council, Barnstable County Department of Human Services. October 5, 2017. Available at: http://www.bchumanservices.net/library/2018/02/BCDHS-Death-Certificate-Analysis-Final-Report-10-5-17-Update-1.pdf. Accessed August 22, 2023.

[8] Funaiole P, Dustin L, Spencer P. Harnessing the tradition of brotherhood to reduce opioid overdose deaths among trades workers in Massachusetts. Presented at the annual meeting of the National Prevention Network; September 2017; Anaheim, CA. Available at: http://www.npnconference.org/wp-content/uploads/2017/09/Funaiole-Dustin-Spencer.pdf. Accessed August 22, 2023.

- **Compensation Landscape Not Supportive**

Many construction workers do not report ‘wear and tear injuries’ (disablement/gradual onset) due to stigma and fear of employer retaliation. Even when ‘wear and tear’ injuries are reported to a compensation provider, they are routinely denied. For example, in Ontario, the Workplace Safety and Insurance Board’s (WSIB) continued aggressive approach to adjudication has created several challenges for workers when dealing with entitlement issues. Too often, gradual onset disablements are denied, even when all the medical evidence supports work relatedness. Moreover, attributing ongoing symptoms to a pre-existing condition has become the main tool to limit benefits for work-related injuries. In the past few years, the WSIB has regularly denied ongoing entitlement where workers have not recovered from a strain or musculoskeletal injury within the ‘expected’ recovery time.

Older workers have especially been hit hard as the WSIB tells these workers that their injuries should have healed and further, blames any ongoing symptoms on age-related degeneration. This results in workers not claiming for benefits and continuing to struggle with their pain, which often leads to substance use.

Additionally, the WSIB has denied more than 90 per cent of claims filed for chronic mental stress, a rate that far exceeds other kinds of workplace injuries.[9] There is a correlation between workplace stressors, ongoing musculoskeletal pain, and mental health disorders. However, in 2017, when the WSIB introduced its chronic mental stress policy, it had implemented a higher standard of proof for workers experiencing mental stress to receive compensation than those with other kinds of physical work-related injuries. The different entitlement criteria were introduced partly due to the employer lobby pressuring the government of the day. The employers believed that there would be a flood of chronic mental health claims which would bankrupt the system. However, the reality is that physical and mental injuries are not substantially different and should not be treated as such. It is acknowledged that both can be complicated, however it is the WSIB’s job in both scenarios to follow the evidence and arrive at a fair decision. In many ways, the employer community’s lobbying efforts to implement stricter entitlement regimes for physical and mental health injuries have essentially contributed to the current crisis regarding chronic pain, opioid misuse, and mental health in the workplace.

- **Reluctance of Workers to Report & Seek Treatment**

One of the biggest barriers in the construction industry for implementing organizational responses to the opioid crisis and workplace settings is the reluctance by construction workers to report episodic or persistent workplace pain and discomfort. A second, contributing factor is the social stigma and potential for experiencing job loss if opioid use (whether legal or illicit) becomes known to co-workers and/or supervisors.

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[9] https://www.thestar.com/news/investigations/chronic-stress-is-a-recognized-work-injury-so-why-does-ontario-s-wsib-reject-more/article_ec151478-2ffa-5672-8b0c-7805a7cd94e2.html (May 23, 2023).

Third, a major issue in the construction sector is the underreporting of injuries. The underreporting of injuries further obscures the relationship between workplace physical demands, pain, and opioid use. Moreover, the fact that WSIB routinely denies 'wear and tear injuries,' coupled with the underreporting has created a landscape in which the true burden of musculoskeletal injuries is not known. Therefore, the true burden of musculoskeletal injuries and associated pain is difficult for employers, unions, and regulatory agencies to address in a way that ensures adequate treatment and sufficient prevention measures.

Given that construction workers are unlikely to report musculoskeletal hazards and associated pain to a supervisor, workplace practices must be generalized and standardized with proper messaging about pain management and opioid use. Communication should be cohesive and supportive to ensure that workers are comfortable to seek assistance without fear of reprisals and without any stigma attached to pursuing such a course of action.

Moving Towards a 'Total Worker Health' Perspective

One method for engaging employers and unions about opioid use and other worker health issues, spanning work and family life of employees is the Total Worker Health (TWH) approach recommended by the National Institute for Occupational Safety and Health (NIOSH). This particular perspective is defined as a collection of 'policies, programs, and practices that integrate protection from work-related safety and health hazards with promotion of injury and illness prevention efforts to advance worker well-being.'[10] The TWH perspective examines the shared responsibility and opportunities that exist for health and well-being to be prioritized among those who control the conditions of work.

This is relevant because opioid use can involve both personal risk factors such as age, gender, fitness, occupational identity, and health history. Additionally, with workplace factors such as physical demands, hours of work, job insecurity, and time pressures, the TWH approach might help to draw employer attention to both personal and worksite factors to prevent OUD among workers.

Furthermore, work-related back injuries, for instance, are common in the construction industry and frequently lead to workers seeking opioid prescriptions. While a heavy physical workload is an important risk factor, this hazard may interact with obesity, lack of aerobic fitness, and other personal health conditions and behaviors. The TWH framework may thus be useful to expand opioid discussions between workers and employers.

[10] Tamers SL, Chosewood LC, Childress A, Hudson H, Nigam J, Chang C. Total Worker Health® 2014–2018: the novel approach to worker safety, health and well-being evolves. *Int J Environ Res Public Health.* 2019;16(3):E321. [PMC free article] [PubMed] [Google Scholar]

Recommendations to address workplace factors in the prevention of Opioid Overdose Deaths

Agent	Problem	Actions
Government	Compensation Landscape Not Supportive	Review of Workplace Safety and Insurance Board (WSIB) entitlement policies (gradual onset and chronic mental stress policies)
Government	Few non-pharmacological treatment options available for management of acute or chronic pain	Provide local/community access to high quality pain management programs applying behavioural principles, interdisciplinary care, and a bio/psychosocial framework.
Government	Health and safety working conditions	Ongoing inspections/enforcement targeting MSK hazards and workplace hazards
Government	Musculoskeletal (MSK) injuries approached as a singular, localized issue	Following the biopsychosocial-emotional multimodal research of injury/pain treatment/ management, expand research of biopsychosocial-emotional factors that contribute and/or exacerbate MSK injuries.
Government Employers Union	Limited awareness of job MSK/ biopsychosocial-emotional expectations, exertion, and strain	Provided job operational evaluation of MSK/biopsychosocial-emotional expectations, exertion and strain including but not limited to biomarkers, skills development, functional application skills, communication.
Government Employers Union	Prevailing approach to MSK injury pain is avoidance & is symptom reactive	Provide proactive, restorative programming & resources supporting active wellness; optimal mind/body conditioning & preparedness relative.
Government Employers Union	Healthy/ not healthy perspective of pain and injury can be exclusionary and divisive	Expand perspective of injury/pain to include a graduated assessment of an incident and accessibility to non-opioid based resources balanced by an optimal successive plan.
Government	No musculoskeletal strategy	A successful management of musculoskeletal issues requires a wide range of interventions, mainly at the workplace level. These include: 1. Increased Inspection as there is insufficient enforcement of the manual handling and ergonomic hazards in the workplace. 2. Developing Ontario's first Ergonomic standard and supportive regulations. 3. Employers are over-reliant on training to address musculoskeletal issues; instead, they should be using risk assessment to reduce physical exposures. 4. The quality of manual handling training is often poor. Developing and enforcing consistent and uniform training standards for material handling would be helpful. 5. Poor workplace design can increase the need for manual handling, which consequently reduces productivity. 6. A poor ergonomic set-up of equipment contributes to musculoskeletal injuries and consequently, reduces productivity.
Government	Absence of research on the workplace factors and interventions to prevent Opioid Use Disorders	Ontario's Prevention Office and other funding agencies to prioritize work environment and prevention of opioid-related deaths specifically in the construction sector, which has a direct relationship between workplace hazards and chronic musculoskeletal pain and opioid addictions.
	Workplace Occupational Health and	Move to a Total Worker Health (TWH) model organized

Agent	Problem	Actions
Employers	Safety Programs are not holistic. Conventional health promotion practice generally focuses on personal risk factors and individual behavioral change	around the paradigm of integrating traditional occupational safety and health protections with workplace health promotion. The TWH can place a broader emphasis on workplace programs for enhancing worker safety, health, and well-being. Training often provided as the only prevention technique, or to meet government requirements.
Employers and Unions	Workers receive little education about risks and treatments for Opioid Use Disorders	Expand existing safety, apprenticeship, and worker wellness training programs. This can incorporate information about opioid risks, non-pharmacological pain management alternatives, and how to access confidential care.
Unions	Ineffective Employee Assistance Programs	Ensure that Employee Assistance Programs provide adequate nonpharmacological treatments for acute pain, such as physiotherapy, chiropractic care and patient education.
Government Employers Union	Limited incorporation of Trauma Informed Practice in support of MSK injury/pain and Opioid misuse	When MSK injury/pain and opioid misuse is exacerbated by trauma support can be expanded in the in the following ways: 1) Assessment / Treatment determining vicarious, individual environmental impact. 2) Impact related to regulation, coping executive functioning and new learning. 3) T.I. Adapted learning & education of workplace supports 4) RTW programs w/ “real time” functioning w/ guided support, training, data collection, measurable goals 5) Family systems support w/ education regarding MSK injury/pain, opioid misuse, and trauma
Government Employers Union	Limited workplace education and practices specific opioid misuse /harm reduction awareness and overdose prevention	Given the growth movement toward harm reduction vs abstinence policy development, awareness and skills training is required to support the worker, reduce the stigmatization, and inform employer of best practices. Including awareness of.
Worker	Lack of reporting/seeking medical attention	Document your employment history, claims are often denied due to gaps in work history. Seek medical attention for pain/injuries. Most WSIB claims are denied due to lack of continuity. If injured on the job document who witnessed and/or get a statement. Do not be forced to not file a claim, this can result in future denial of new claims for recurrences.

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Conclusion

The evidence linking construction workplaces to chronic musculoskeletal pain as an exacerbating factor in opioid use is beginning to come to light. If the construction sector is going to adequately address the issue, both employers and labour unions need to take a serious look at prevention, intervention, treatment, and recovery strategies in a way that is comprehensive and evidence-based.

Primary prevention interventions include recognizing, evaluating, and controlling workplace hazards that might contribute to acute or chronic injuries, followed by an understanding of how to avoid issuing prescriptions as the first ‘go-to’ fix because prescriptions often lead to Opioid Use Disorders.