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**September 25, 2020**

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**\*Smith PM, Oudyk J, Potter G, and Mustard C. The association between the perceived adequacy of workplace infection control procedures and personal protective equipment with mental health symptoms: a cross-sectional survey of Canadian health-care workers during the COVID-19 pandemic: L'association entre le caractère adéquat perçu des procédures de contrôle des infections au travail et de l'équipement de protection personnel pour les symptômes de santé mentale. Un sondage transversal des travailleurs de la santé canadiens durant la pandémie COVID-19. Canadian Journal of Psychiatry. 2020; [epub ahead of print].**

<https://doi.org/10.1177/0706743720961729>

Abstract: OBJECTIVES: To examine the relationship between perceived adequacy of personal protective equipment (PPE) and workplace-based infection control procedures (ICP) and mental health symptoms among a sample of health-care workers in Canada within the context of the current COVID-19 pandemic. METHODS: A convenience-based internet survey of health-care workers in Canada was facilitated through various labor organizations between April 7 and May 13, 2020. A total of 7,298 respondents started the survey, of



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which 5,988 reported information on the main exposures and outcomes. Anxiety symptoms were assessed using the Generalized Anxiety Disorder (GAD-2) screener, and depression symptoms using the Patient Health Questionnaire (PHQ-2) screener. We assessed the perceived need and adequacy of 8 types of PPE and 10 different ICP. Regression analyses examined the proportion of GAD-2 and PHQ-2 scores of 3 and higher across levels of PPE and ICP, adjusted for a range of demographic, occupation, workplace, and COVID-19-specific measures. RESULTS: A total of 54.8% (95% confidence interval [CI], 53.5% to 56.1%) of the sample had GAD-2 scores of 3 and higher, and 42.3% (95% CI, 41.0% to 43.6%) of the sample had PHQ-2 scores of 3 and higher. Absolute differences of 18% (95% CI, 12% to 23%) and 17% (95% CI, 12% to 22%) were observed in the prevalence of GAD-2 scores of 3 and higher between workers whose perceived PPE needs and ICP needs were met compared to those who needs were not met. Differences of between 11% (95% CI, 6% to 17%) and 19% (95% CI, 14% to 24%) were observed in PHQ-2 scores of 3 and higher across these same PPE and ICP categories. CONCLUSIONS: Our results suggest strengthening employer-based infection control strategies likely has important implications for the mental health symptoms among health-care workers in Canada

**Arif AA and Adeyemi O. Mortality among workers employed in the mining industry in the United States: a 29-year analysis of the National Health Interview Survey-Linked Mortality File, 1986-2014. American Journal of Industrial Medicine. 2020; [epub ahead of print].**

<https://doi.org/10.1002/ajim.23160>

Abstract: Background: Working in the mining industry increases the risk of chronic diseases and mortality. We investigated overall and cause-specific mortality rates among workers employed in the mining sector in the United States. Methods: We pooled 29 years of National Health Interview Survey (NHIS) public-use data from 1986 to 2014, with mortality follow-up until 31 December 2015. We grouped respondents into the mining and nonmining sectors based on the responses given at the time of the NHIS interview. We compared the overall and cause-specific mortality rates using standardized mortality ratios (SMR) and 95% confidence interval (CI) adjusted for the competing cause of death. Results: From 1986 to 2014, an estimated



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14 million deaths were recorded among subjects eligible for mortality follow-up. Of these, an estimated 50,000 deaths occurred among those working in the mining sector. A significantly higher overall mortality (SMR = 1.26, 95% CI: 1.17-1.36), and mortality from heart diseases (adjusted SMR = 1.56, 95% CI: 1.31-1.83), cancer (adjusted SMR = 1.30, 95% CI: 1.14-1.48) and unintentional injuries (adjusted SMR = 1.41, 95% CI: 1.03-1.85) were observed among those employed in the mining sector. When the analyses were restricted to men, only the SMRs for heart disease and cancer remained statistically significant. No elevated SMR for deaths from chronic lower respiratory disease was observed in the study. Conclusion: Workers employed in the mining sector have a significantly increased total death rate and death rates from heart disease, cancer, and unintentional injuries.

**Bannister-Tyrrell M and Meiqari L. Qualitative research in epidemiology: theoretical and methodological perspectives. *Annals of Epidemiology*. 2020; 49:27-35.**

<https://doi.org/10.1016/j.annepidem.2020.07.008>

Abstract: Increasingly, modern epidemiology has adopted complex causal frameworks incorporating individual- and population-level determinants of health. Despite the growing use of qualitative methodologies in public health research generally, discussion of causal reasoning in epidemiology rarely considers evidence derived from qualitative research. This article argues for a coherent role of qualitative research within epidemiology through analysis of the principles of causal reasoning that underlie current debates about causal inference in epidemiology. It introduces two approaches to causal inference by Russo and Williamson (2009) and Reiss (2012) that emphasize the relevance of both the nature of causation and how knowledge is gained about causation in assessing evidence for a causal relation. Both theories have scope for incorporating multiple types of evidence to assess causal claims. We argue that these theories align with the empirical focus of epidemiology and allow for different types of evidence to evaluate causal claims, including evidence originating from qualitative research; such evidence can contribute to a mechanistic understanding of causal relations and to understanding the effects of context on health-related outcomes. Finally, we discuss this approach in light of previous literature on the



role of qualitative research in epidemiology and implications for future epidemiologic research

**Brathen M, van der Wel K, and Loyland B. Mental health and access to active labor market programs. *Nordic Journal of Working Life Studies*. 2020; 10(3):23-41.**

<https://doi.org/10.18291/njwls.v10i3.121843> [open access]

Abstract: This paper examines the often-overlooked precondition for successful implementation of active labor market policy, namely equal access to labor market programs. Focusing on a cohort of social assistance recipients, we compare program participation between individuals who were eligible for vocational training and had reported psychological distress, to possible participants with other health or social challenges. The study covers a period of six years. The results indicate that social services prioritize training for those without mental health problems. This is true independently of observed differences between the two groups in terms of demographic and human capital characteristics, work motivation and self-efficacy. Hence, the study concludes that there seems to be a mental health access bias in program participation among disadvantaged groups. Policy makers and future research should address possible organizational barriers to equal program access

**Dale AM, Colvin R, Barrera M, Strickland JR, and Evanoff BA. The association between subcontractor safety management programs and worker perceived safety climate in commercial construction projects. *Journal of Safety Research*. 2020; 74:279-288.**

<https://doi.org/10.1016/j.jsr.2020.06.010>

Abstract: Problem: Safety management programs (SMPs) are designed to mitigate risk of workplace injuries and create a safe working climate. The purpose of this project was to evaluate the relationship between contractors' SMPs and workers' perceived safety climate and safety behaviors among small and medium-sized construction subcontractors. Methods: Subcontractor SMP scores on 18 organizational and project-level safety items were coded from subcontractors' written safety programs and interviews. Workers completed surveys to report perceptions of their contractor's safety climate and the safety behaviors of coworkers, crews, and



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themselves. The associations between SMP scores and safety climate and behavior scales were examined using Spearman correlation and hierarchical linear regression models (HLM). Results: Among 78 subcontractors working on large commercial construction projects, we found striking differences in SMP scores between small, medium, and large subcontractors ( $p < 0.001$ ), related to a number of specific safety management practices. We observed only weak relationships between SMP scales and safety climate scores reported by 746 workers of these subcontractors ( $\beta = 0.09$ ,  $p = 0.04$  by HLM). We saw no differences in worker reported safety climate and safety behaviors by contractor size. Discussion: SMP only weakly predicted safety climate scales of subcontractors, yet there were large differences in the quality and content of SMPs by size of employers. Summary: Future work should determine the best way to measure safety performance of construction companies and determine the factors that can lead to improved safety performance of construction firms. Practical applications: Our simple assessment of common elements of safety management programs used document review and interviews with knowledgeable representatives. These methods identified specific safety management practices that differed between large and small employers. In order to improve construction safety, it is important to understand how best to measure safety performance in construction companies to gain knowledge for creating safer work environments.

**Gohar B, Lariviere M, Lightfoot N, Wenghofer E, Lariviere C, and Nowrouzi-Kia B. Understanding sickness absence in nurses and personal support workers: insights from frontline staff and key informants in Northeastern Ontario. Work. 2020; 66(4):755-766. <https://doi.org/10.3233/WOR-203222>**

Abstract: Background: Nurses and personal support workers (PSWs) have high sickness absence rates in Canada. Whilst the evidence-based literature helped to identify the variables related to sickness absenteeism, understanding "why" remains unknown. This information could benefit the healthcare sector in northeastern Ontario and in locations where healthcare is one of the largest employment sectors and where nursing staff have high absence and turnover rates. Objective: To identify and understand the factors associated with sickness absence among nurses and PSWs through



several experiences while investigating if there are northern-related reasons to explain the high rates of sickness absence. Methods: In this descriptive qualitative study, focus group sessions took place with registered nurses (n = 6), registered practical nurses (n = 4), PSWs (n = 8), and key informants who specialize in occupational health and nursing unions (n = 5). Focus group sessions were transcribed verbatim followed by inductive thematic analysis. Results: Four main themes emerged, which were occupational/organizational challenges, physical health, emotional toll on mental well-being, and northern-related challenges. Descriptions of why such factors lead to sickness absence were addressed with staff shortage serving as an underlying factor. Conclusion: Despite the complexity of the manifestations of sickness absence, work support and timely debriefing could reduce sickness absence and by extension, staff shortage.

**Green-McKenzie J, Somasundaram P, Lawler T, O'Hara E, and Shofer FS. Prevalence of burnout in occupational and environmental medicine physicians in the United States. Journal of Occupational & Environmental Medicine. 2020; 62(9):680-685. <https://doi.org/10.1097/JOM.0000000000001913>**

Abstract: Objective: To determine prevalence and key drivers of burnout in Occupational and Environmental Medicine physicians in the United States. Methods: A nationwide survey of Occupational Medicine physicians was conducted using the Qualtrics® platform. Burnout, measured by the Maslach Burnout Inventory®, Social Support, and Job Satisfaction were assessed. Results: The response rate was 46%, the overall burnout prevalence 38%, and most respondents were men (69%). The mean age and mean years in practice were 56 years and 20 years respectively. Physicians working in government/military (48%) and private medical center group settings (46%) were significantly more likely to report burnout, with consultants (15%) reporting the lowest rate. Conclusions: Although the overall burnout prevalence is lower in Occupational Medicine physicians compared with most specialties, the rate varies significantly by practice setting (15% to 48%) affirming the impact of organizational factors.



**Hyman MH, Talmage JB, and Hegmann KT. Evaluating COVID-19 injury claims with a focus on workers' compensation. Journal of Occupational & Environmental Medicine. 2020; 62(9):692-699.**

<https://doi.org/10.1097/JOM.0000000000001950>

Abstract: : COVID-19 illness can cause multiorgan illness. Some States have passed legislation granting a rebuttable presumption of causation by workplace exposure in certain occupations. This paper summarizes methodology for evaluating claimants utilizing known science and as well as information from the American Medical Association Guides resources

**Lopez Gomez MA, Williams JAR, Boden L, Sorensen G, Hopcia K, Hashimoto D, et al. The relationship of occupational injury and use of mental health care. Journal of Safety Research. 2020; 74:227-232.**

<https://doi.org/10.1016/j.jsr.2020.06.004>

Abstract: Introduction: Symptoms of depression and anxiety are a common consequence of occupational injury regardless of its cause and type. Nevertheless, mental health care is rarely covered by workers' compensation systems. The aim of this study was to assess the use of mental health care post-injury. Methods: We used a subsample of patient-care workers from the Boston Hospital Workers Health Study (BHWHS). We matched one injured worker with three uninjured workers during the period of 2012-2014 based on age and job title (nurse or patient-care associate) and looked at their mental health care use pre- and post-injury using medical claims data from the employer sponsored health plan. We used logistic regression analysis to assess the likelihood of mental health care use three and six months post-injury controlling for any pre-injury visits. Analyses were repeated separately by job title. Results: There were 556 injured workers between 2012 and 2014 that were matched with three uninjured workers at the time of injury (n = 1,649). Injured workers had a higher likelihood of seeking mental health care services than their uninjured counterparts during the six months after injury (OR = 1.646, 95% CI: 1.23-2.20), but not three months post-injury (OR = 0.825, 95% CI: 0.57-1.19). Patient-care associates had a higher likelihood to seek mental health care post-injury, than nurses (OR: 2.133 vs OR: 1.556) during the six months period. Conclusions: Injured workers have a higher likelihood to experience symptoms of



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depression and anxiety based on their use of mental health care post-injury and use is more predominant among patient-care associates; however, our sample has a small number of patient-care associates. Practical Applications: Treating depression and anxiety as part of the workers' compensation system has the potential of preventing further physical ailment and improving the return to work process regardless of nature of injury.

**Memari A, Shariat A, and Anastasio AT. Rising incidence of musculoskeletal discomfort in the wake of the COVID-19 crisis. Work. 2020; 66(4):751-753.**

<https://doi.org/10.3233/WOR-203221>

Abstract: The COVID-19 pandemic has led to the shutdown of much of the world's economic and social operations. Given shutdown of exercise facilities, there has been a sharp uptick in a sedentary lifestyle. As people have lost their normal daily activity patterns, it is reasonable to assume that musculoskeletal pain-related syndromes will consequently begin to increase. In addition, there has been a rise in social network, television, and online home-based workouts. In the wake of the COVID-19 pandemic, it is unclear whether previous recommendations for physical activities will remain sufficient, given cessation of normal physical activities from day-to-day life. We raise a variety of questions in dealing with the potential fallout of the COVID-19 shutdown from a musculoskeletal standpoint

**Mhango M, Dzobo M, Chitungo I, and Dzinamarira T. COVID-19 risk factors among health workers: a rapid review. Safety and Health at Work. 2020; 11(3):262-265.**

<https://doi.org/10.1016/j.shaw.2020.06.001> [open access]

Abstract: Coronavirus disease 2019 (Covid-19) poses an important occupational health risk to health workers (HWs) that has attracted global scrutiny. To date, several thousand HWs globally have been reported as infected with the severe acute respiratory syndrome coronavirus 2 virus that causes the disease. It is therefore a public health priority for policymakers to understand risk factors for this vulnerable group to avert occupational transmission. A rapid review was carried out on 20 April 2020 on Covid-19 risk factors among HWs in PubMed, Google Scholar, and EBSCOHost Web (Academic Search Complete, CINAHL Complete, MEDLINE with Full Text,



CINAHL with Full Text, APA PsycInfo, Health Source—Consumer Edition, Health Source: Nursing/Academic Edition) and WHO Global Database. We also searched for preprints on the medRxiv database. We searched for reports, reviews, and primary observational studies (case control, case cross-over, cross-sectional, and cohort). The review included studies conducted among HWs with Covid-19 that reported risk factors irrespective of their sample size. Eleven studies met the inclusion criteria. Lack of personal protective equipment, exposure to infected patients, work overload, poor infection control, and preexisting medical conditions were identified as risk factors for Covid-19 among HWs. In the context of Covid-19, HWs face an unprecedented occupational risk of morbidity and mortality. There is need for rapid development of sustainable measures that protect HWs from the pandemic.

**Patel J, Gimeno Ruiz de Porras D, Mitchell LE, Patel RR, De Los Reyes J, and elclos GL. Work-related asthma among certified nurse aides in Texas. Workplace Health & Safety. 2020; 68(10):491-500.**

<https://doi.org/10.1177/2165079920914322>

Abstract: Background: Although nurses are well described as being at risk of work-related asthma, certified nurse aides (CNAs) are understudied. Using a statewide registry in Texas, we measured prevalence and risk factors for work-related asthma and bronchial hyperresponsiveness (BHR) symptoms among CNAs. Methods: For this cross-sectional study, a questionnaire was mailed to a random sample of CNAs (n = 2,114) identified through the Texas Department of Aging and Disability Services registry, working in health care during 2016-2017, to collect data on job history, asthma symptoms, and sociodemographics. Two outcomes were defined: (a) new-onset asthma (NOA) after entry into the health care field and (b) BHR-related symptoms. Job exposures to cleaning compounds and tasks were assigned using an externally coded CNA-specific job-exposure matrix. Logistic regression modeling was used to measure associations between cleaning exposures and the two asthma outcomes. Findings: The final sample consisted of 413 CNAs (response rate 21.6%). The prevalence of NOA and BHR symptoms were 3.6% and 26.9%, respectively. In adjusted models, elevated odds for BHR symptoms were observed for patient care cleaning



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(odds ratio [OR] = 1.71, 95% confidence interval [CI] = [0.45, 6.51]), instrument cleaning (OR = 1.33, 95% CI = [0.66, 2.68]), building-surface cleaning (OR = 1.39, 95% CI = [0.35, 5.60]), exposure to glutaraldehyde/orthophthalaldehyde (OR = 1.33, 95% CI = [0.66, 2.68]), and latex glove use during 1992-2000 (OR = 1.62, 95% CI = [0.84, 3.12]). There were too few NOA cases to warrant meaningful regression analysis. Conclusion/Application to Practice: Although not statistically significant, we observed elevated odds of BHR symptoms among nurse aides, associated with cleaning exposures, suggesting this is an at-risk group of health care professionals for work-related respiratory disease, meriting further study

**Reddon H, DeBeck K, Socias ME, Lake S, Dong H, Karamouzian M, et al. Frequent cannabis use and cessation of injection of opioids, Vancouver, Canada, 2005-2018. American Journal of Public Health. 2020; 110(10):1553-1560.**

<https://doi.org/10.2105/AJPH.2020.305825>

Abstract: Objectives. To evaluate the impact of frequent cannabis use on injection cessation and injection relapse among people who inject drugs (PWID). Methods. Three prospective cohorts of PWID from Vancouver, Canada, provided the data for these analyses. We used extended Cox regression analysis with time-updated covariates to analyze the association between cannabis use and injection cessation and injection relapse. Results. Between 2005 and 2018, at-least-daily cannabis use was associated with swifter rates of injection cessation (adjusted hazard ratio [AHR] = 1.16; 95% confidence interval [CI] = 1.03, 1.30). A subanalysis revealed that this association was only significant for opioid injection cessation (AHR = 1.26; 95% CI = 1.12, 1.41). At-least-daily cannabis use was not significantly associated with injection relapse (AHR = 1.08; 95% CI = 0.95, 1.23). Conclusions. We observed that at-least-daily cannabis use was associated with a 16% increase in the hazard rate of injection cessation, and this effect was restricted to the cessation of injection opioids. This finding is encouraging given the uncertainty surrounding the impact of cannabis policies on PWID during the ongoing opioid overdose crisis in many settings in the United States and Canada.



**Torres VA, Strack JE, Dolan S, Kruse MI, Pennington ML, Synett SJ, et al. Identifying frequency of mild traumatic brain injury in firefighters. *Workplace Health & Safety*. 2020; 68(10):468-475.**

<https://doi.org/10.1177/2165079920922576>

Abstract: Background: Mild traumatic brain injury (mTBI) is a nationwide problem; yet, no firefighter mTBI data are available. Methods: In this cross-sectional study, we assessed retrospective head injuries using WHO guidelines. We captured mTBI frequency and examined firefighters' symptoms (e.g., using Ohio State University Traumatic Brain Injury Identification method, Brief Traumatic Brain Injury Screen, Warrior Administered Retrospective Causality Assessment Tool). Findings: Of 1,112 firefighters contacted, 60 responses were included. Most participants were White (80%), male (90%), former athletes (75%). 62% met mTBI symptom criteria. 75% reported at least one lifetime head injury. Number of head injuries and depression symptoms were associated ( $r = .36, p < .05$ ). Conclusion/application to practice: Overall, it appears most firefighters have sustained at least one lifetime mTBI. Those with multiple head injuries may be at increased risk of depression. Occupational health professionals should be aware of firefighters' mTBI risk. Further research is warranted given findings

**Waffenschmidt S, Navarro-Ruan T, Hobson N, Hausner E, Sauerland S, and Haynes RB. Development and validation of study filters for identifying controlled non-randomized studies in PubMed and Ovid MEDLINE. *Research Synthesis Methods*. 2020; 11(5):617-626.**

<https://doi.org/10.1002/jrsm.1425>

Abstract: A retrospective analysis published by the German Institute for Quality and Efficiency in Health Care (IQWiG) in 2018 concluded that no filter for non-randomized studies (NRS) achieved sufficient sensitivity (=92%), a precondition for comprehensive information retrieval. New NRS filters are therefore required, taking into account the challenges related to this study type. Our evaluation focused on the development of study filters for NRS with a control group ("controlled NRS"), as this study type allows the calculation of an effect size. In addition, we assumed that due to the more explicit search syntax, controlled NRS are easier to identify than non-controlled ones, potentially resulting in better performance measures



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of study filters for controlled NRS. Our aim was to develop study filters for identifying controlled NRS in PubMed and Ovid MEDLINE. We developed two new search filters that can assist clinicians and researchers in identifying controlled NRS in PubMed and Ovid MEDLINE. The reference set was based on 2110 publications in Medline extracted from 271 Cochrane reviews and on 4333 irrelevant references. The first filter maximizes sensitivity (92.42%; specificity 79.67%, precision 68.49%) and should be used when a comprehensive search is needed. The second filter maximizes specificity (92.06%; precision 82.98%, sensitivity 80.94%) and should be used when a more focused search is sufficient.

**Zaman AGNM, Tytgat KMAJ, Klinkenbijn JHG, Frings-Dresen MHW, and de Boer AGEM. Is a tailored work-related support intervention feasible in everyday clinical practice? The experience of healthcare professionals and patients with cancer. Work. 2020; 66(4):871-884.**

<https://doi.org/10.3233/WOR-203232>

Abstract: BACKGROUND: Work is valued as an important feature in life, however patients diagnosed with cancer can experience work-related problems. We developed a work-related support intervention to support those in need. OBJECTIVE: The objective of this study was to evaluate the feasibility of the performed tailored GIRONA (Gastro Intestinal cancer patients Receiving Occupational support Near and After diagnosis) intervention and to describe the experiences of those receiving the work-related support and of those providing it. METHODS: An online questionnaire was used to survey the feasibility of the intervention of the support recipients (patients diagnosed with gastrointestinal cancer) and the support providers (healthcare professionals including: oncology nurses and oncological occupational physicians). Five themes were covered: acceptability, demand, implementation, practicality and integration of Bowen's feasibility model. RESULTS: Twenty-three patients, 14 oncology nurses and 4 oncological occupational physicians, shared their experiences about the tailored work-related support intervention. This intervention was generally perceived as positive and feasible by the participants. Some patients received work-related support despite not experiencing severe problems; others mentioned that they received no such support even though they did need it. Despite positive



experiences, there are some barriers to tackle, such as length of consultation, timing of the initiation of work-related support and embedding the oncological occupational physician within the clinical setting. **CONCLUSION:** According to the healthcare professionals involved, GIRONA is feasible, however some practical barriers were mentioned. The intervention was perceived as positive by both patients and healthcare professionals, but the tailored component could be further improved to better support those in need of work-related support

\*IWH authored publication.