

cohorts of contemporary workers. 169 work-related exposures had been investigated in relation to retirement outcomes. The exposures were grouped into 19 categories to enable comparison and synthesis. The included studies were heterogeneous in terms of outcome definitions and measurement of exposures. However, appreciation at work and higher job control consistently associated with a decreased risk of retirement. The review also highlighted limited evidence that: age discrimination: having a positive culture of working beyond SPA: flexible working hours: and job prospects may influence retirement.

Conclusion Increasing worker's job control and perception of appreciation at work have may delay retirement decisions. Further research is required to explore the effect of work-related factors on retirement in cohorts of contemporary workers.

P-206 'ASSESSING THE IMPACT OF EXPOSURE CONTROL ON FUTURE CANCER BURDEN AMONG CONSTRUCTION WORKERS'

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Objectives Construction workers are exposed to several carcinogens at work. Implementing intervention methods may reduce workers' exposure, which should subsequently reduce the number of cancer cases attributable to the exposure. The current study estimates the future cancer burden due to several common carcinogens among Ontario construction workers, and assesses the impact of implementing interventions on this burden. This presentation focuses on solar ultraviolet radiation and asbestos.

Methods The annual number of new cancer cases attributable to each carcinogen was estimated from 2030 to 2060 using Levin's equation based on the prevalence of exposure (PrE) and the risk of cancer (RR) associated with exposure. The RR was selected from a review of the epidemiologic literature. The PrE was estimated using CAREX Canada's estimates of prevalence and level of exposure, combined with historical and projected employment data, labour force characteristics, and survival probabilities. The intervention methods specific to each carcinogen were assumed to be fully implemented from 2020, and incorporated into the model by adjusting prevalence and level of exposure downwards.

Results We estimated that without intervention, 27645 non-melanoma skin cancers would be attributable to sun exposure in Ontario construction workers from 2030 to 2060. Using portable shade structure and hat/long sleeve clothes, a total of 1957 and 2503 of these cases would be prevented, respectively. For asbestos, the two interventions, asbestos ban and building registry, would prevent 56 and 439 lung cancers out of the 6022 attributable cases from 2030 to 2060 if no intervention was applied.

Conclusions Future work-related cancers can be prevented by reducing workers' exposure. Combining the economic assessment of both the cancer burden and the costs of implementing exposure controls will help to assess the cost-benefit of different intervention methods, which can be used to direct intervention strategies in construction workplace.

P-212 'RETURN TO WORK AFTER VOCATIONAL REHABILITATION'

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Introduction Changes in the workplace environment, precarization and flexibilization of employment, loss of labor rights, and the big economy have had an impact, increasing work accidents, harms, and occupational diseases as well sick leaves. In Brazil, Vocational Rehabilitation (VR) is provided by the National Institute of Social Security system and includes educational, adjustment, and re-adjustment support to facilitate return to work among workers who receive benefits due disease or accidents. However, its scope is quite limited and does not offer a follow-up to workers after discharge.

Objective To understand the return to work after discharge of the VR.

Methods Qualitative study developed in a VR program from Sao Paulo state and carried out in two phases: (i) documental analysis to identify potential participants who were assisted by VR; (ii) individual interviews by telephone following an open questions script and analyzed through Thematic Content Analysis. This research was approved by the Ethical Committee of Federal University of Sao Carlos; all ethical concerns were addressed.

Results From 2009 to 2020, 263 workers returned to work after discharge of VR: 84 (32%) women and 179 (68%) men received support predominantly due to musculoskeletal disorders (35%) and external causes of injuries (33%). Of these, 71 (27%) returned to the same task and 192 (73%) to different ones. 33 workers discharged from VR during 2019–2020 were invited to participate in the interviews and 11 workers were interviewed. Three categories emerged from interviews: difficulties in the return to work process; limits of VR to return to work; necessary advances to VR regard to return to work.

Conclusion Results showed the need for reorganization of VR including review of criteria of inclusion, interprofessional team analysis of potential participants, discharge mechanisms, follow-up of the worker after discharge, and negotiating with employers accommodation to the rehabilitated worker.

P-213 'USING PARITY MONITOR AND RANDOM FOREST MODELS TO EXPLORE INDICATORS OF INDOOR AIR QUALITY FOR INDEPENDENT WORKERS IN COFFEE SHOPS'

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Introduction Independent workers often work in Taiwan's coffee shops. However, there is not enough information for workers to notice poor indoor air quality (IAQ), such as high concentration of particulate matters (PMs) and carbon dioxide (CO₂).

Objectives This study aims to explore indicators of IAQ for independent workers in the coffee shop industry.

Methods Investigators as mystery shoppers went to several coffee shops in metropolitan area of Taipei and New Taipei City to measure indoor conditions and IAQ. Every selected shop was surveyed twice; each measurement lasted 3 hours. Size-fractionated PMs including PM₁₀, PM_{2.5}, and PM₁ as well as CO₂ were measured by miniature parity monitoring instrument (AS-LUNG) every 15 seconds. Indoor conditions including temperature, and relative humidity (RH) were also measured by AS-LUNG every 15 seconds. Moreover, investigators recorded the weather, condition of indoor ventilation, occupant density, presence of tobacco odors, and customers activities as indoor conditions every 10 minutes. Random forest models R(4.0.3) were used to explore the impact of indoor conditions on concentrations of indoor size-fractionated PMs and CO₂.

Preliminary Results The average indoor concentrations of PM₁₀, PM_{2.5}, and PM₁ and CO₂ in selected coffee shops were 9.75 $\mu\text{g}/\text{m}^3$, 8.49 $\mu\text{g}/\text{m}^3$, 6.18 $\mu\text{g}/\text{m}^3$ and 1079.46 ppm, respectively. Indoor air flow and temperature conditions were two major indicators of IAQ. When opening the window or when the temperature is higher than 20.5°C, concentration of PMs and CO₂ increased.

Conclusion Independent workers could use the shop's indoor air flow and temperature as simple indicators for workplace IAQ. Using the results of this study, workers will be able to select working place with suitable IAQ.

P-216 DEVELOPMENT AND CHALLENGES OF A NATIONAL OCCUPATIONAL HEALTH SURVEILLANCE SYSTEM FOR COVID-19 IN THE WORKPLACE.

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Introduction South Africa does not have a comprehensive occupational health surveillance system for COVID-19. The data collection processes were fragmented and did not provide a comprehensive view of the workforce affected by the pandemic. The National Department of Health initiated the Occupational Health Surveillance System (OHSS).

Objectives To develop a COVID-19 surveillance platform to collect and report on data on workforce vulnerability, COVID-19 positive rates, severe disease outcomes and return to work status of workers.

Methods The OHSS commenced data collection on the 1st October 2020 following the promulgation of the Department Employment and Labour Directive to legally require employers to submit the data on a regular basis. Awareness campaigns were conducted to obtain the compliance of employers to report.

Results After a period from 1 October 2020 to 31 March 2021, which coincided with the second wave, a total of 3111 businesses had registered covering a total 1,829,897 employees. During this period 3,704 positive cases were reported, with the majority from Gauteng province (48,2%), the economic hub of the country and from the banking and insurance (57,0%) followed by the health and social sector (27,3%). A workplace contact was reported in 33% of positive cases. Eighty-nine percent (89%) were symptomatic at the time of diagnosis. Among those with COVID-19, 2,617

(70.6%) had returned to work. There were only 38 (1.5%) deaths reported and 195 (7.5%) employees had been hospitalised.

Conclusion Only 1% of all businesses had registered during this period and only 12.2% of the formal sector employees were represented. Major challenges included missing information, failure of businesses to register and report data. Measures to improve this are currently being undertaken. The enforcement of legislation and ongoing training and awareness of employers is essential to provide the necessary information required so as to plan targeted interventions for COVID-19.

P-220 ASSESSING PROSTATE CANCER RISK AMONG PROTECTIVE SERVICE WORKERS AND HEALTH PROFESSIONALS

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Introduction Fire-fighting occupations and nightshift work are possibly/probably carcinogenic to humans (Groups 2A/2B), according to IARC. Some recent studies also found a higher risk for prostate cancer (PCa) for these occupational categories. However, results are inconsistent and most did not consider the aggressiveness of the tumour.

Objectives To study the risk of PCa among protective service workers and medical professionals, occupations frequently entailing night-shift work, with a particular interest for aggressive cancers.

Methods EPICAP, PROtEuS and MCC-SPAIN are three population-based case-control studies conducted respectively in France, Canada and Spain that included overall 3,859 PCa cases newly diagnosed between 2005 and 2014 in men \leq 85 years old and 4,359 population-based controls frequency-matched on age. Participants have been interviewed face-to-face on their socio-demographic characteristics, lifestyle, leisure activities and complete occupational history for each job held. Occupations were coded using the International Standard Classification of Occupations 1988. Unconditional logistic regressions were performed to assess the association between selected occupations and PCa risk, using the Gleason score at diagnosis, after adjusting for potential confounders.

Results Regarding protective service occupations, we observed positive associations with PCa among participants who has ever worked as police officers (odds ratio (OR)=1.49 [95% confidence interval 1.03 ; 2.17]), as police inspectors and detectives (OR=1.90 [1.06 ; 3.40]), and as fire-fighters (OR=1.62 [0.92 ; 2.86]). We found a negative association for those who ever worked in the armed forces (OR=0.67 [0.53 ; 0.86]). Positive associations with PCa were observed for health professionals (except nursing) who had worked \geq 10 years (OR=1.54 [0.99 ; 2.39]). Analyses taking into account PCa aggressiveness, screening and nightshift work are in progress.

Conclusion Excess PCa risks were observed for occupations that involve a high frequency of nightshift work.