

**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 PM<sub>10</sub>, PM<sub>2.5</sub>, and PM<sub>1</sub> as well as CO<sub>2</sub> 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 CO<sub>2</sub>.

**Preliminary Results** The average indoor concentrations of PM<sub>10</sub>, PM<sub>2.5</sub>, and PM<sub>1</sub> and CO<sub>2</sub> 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 CO<sub>2</sub> 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.