logistic modeling was used to identify risk factors for elevated CBT ($\geq 38.5^{\circ}\text{C}$).

Results In total, 587 farmworkers on 30 farms throughout California participated over the summers of 2014 and 2015. After data cleaning, 507 participants were included in analyses using elevated CBT as the primary outcome. In multiple logistic modeling (AOR [95% CI]) male sex (3.74 [1.22 – 11.54]), WBGT (1.22 [1.08 – 1.38]), work rate (1.004 [1.002 – 1.006]), and increased BMI (1.11 [1.10 – 1.29]) were all independently associated with elevated CBT.

Conclusion Despite high summer temperatures, most farmworkers were able to keep their CBT below 38.5°C . Risk of HRI was exacerbated by work rate and environmental temperature despite farms following Cal/OSHA regulations.

Injuries

0-11 DIFFERENCE IN THE DEATHS OF DESPAIR BY OCCUPATION, MASSACHUSETTS, 2000–2015

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Objective To determine differences in mortality rates and trends according to the occupation of workers who died from the ‘deaths of despair’ (DoD).

Methods Death certificates for deaths due to poisonings (including opioid-related overdoses), suicides, and alcoholic liver disease occurring in Massachusetts from 2000 to 2015 were collected and coded according to the occupation of the decedent. Mortality rates and trends in mortality were calculated for each occupation. We also examined possible underlying causes of differences by occupation in rates of DoD by investigating the relationship between occupational injuries and DoD using data from the U.S. Bureau of Labor Statistics.

Results DoDs increased by more than 50% from 32.5 deaths per 100,000 workers in 2000–2004 to 49.6 in 2011–2015. Deaths increased in all three cause categories, but opioid-related deaths increased most rapidly. There were substantial differences in mortality rates and trends according to occupation. There were particularly elevated risks for blue collar, notably: construction; farming, fishing, and forestry; installation, maintenance, and repair; transportation and material moving; building and grounds cleaning and maintenance; production; and healthcare support workers. Most of these occupations not only had higher than average rates of death, but these rates also increased more rapidly over the 16 year period. As hypothesized, occupations with high injury rates also suffered from high DoD mortality rates. Compared to occupations in the lowest quartile of injuries (< 40 per 10,000 full-time workers), those in the high quartile (> 199 per 10,000 full-time workers) had nearly 4 times higher rates of DoD.

Conclusions These findings suggest that work may be a factor contributing to DoD. Interventions should be targeted to the needs of workers with elevated mortality rates and trends for the deaths of despair. Further work is needed to identify preventable risk factors for these outcomes that may be contributing to these.

0-12 WORKPLACE WELLNESS PROGRAM INTEREST, PARTICIPATION BARRIERS, AND ASSOCIATIONS WITH SOCIODEMOGRAPHICS, HEALTH STATUS, AND WORKPLACE FACTORS: A SURVEY OF WORKERS WITH WORK-RELATED PERMANENT IMPAIRMENTS

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Introduction Injured workers with work-related permanent impairments—who account for roughly 10% of all injured workers—face elevated risks of reinjury and return-to-work (RTW) interruption related to health, disability, and workplace factors. Nearly half of United States workers have access to workplace wellness programs (WWPs), which hold potential to improve health and employment outcomes, yet only 58% of workers with access choose to participate. Equitable access for workers with permanent impairments is crucial, but interest levels and barriers are unknown.

Objectives To assess interest in WWP participation among injured workers who have RTW with a permanent impairment; to assess associations with sociodemographics, health status, and workplace factors; and to describe self-reported participation barriers and reasons for expressing lack of interest.

Methods Workers who had RTW after a work-related injury involving permanent impairment were interviewed about a year after workers’ compensation claim closure. Workers were queried regarding interest in potential WWP participation; if they expressed no interest, they were asked, ‘Why is that?’ Qualitative content analysis methods were used to inductively code open-ended responses.

Results Of 560 respondents, 51.4% expressed interest in WWP participation, and 48.6% were not interested. Expressing interest was significantly associated with more adverse: health status, work function, pain, perceived reinjury risk, job security, missed work days, and earnings. Workers expressing interest were less likely to have health insurance, and more likely to have certain chronic health conditions. Among those not interested (N=272), reasons included: not needed (21.0%), have own fitness/wellness programs (18.38%), wouldn’t be helpful (6.25%). Barriers included: too busy, commute, work schedules, age/health/injury status, privacy. Few workers (1.47%) expressed negative perceptions of WWPs.

Conclusion Most workers with permanent impairments—particularly those at higher risk of adverse health outcomes—are interested in participating in WWPs. Interest among this high-risk population might expand if participation barriers are addressed.

0-35 OCCUPATIONAL INJURIES AND HAZARD EXPOSURES AMONG SMALL-SCALE MINERS IN THE PHILIPPINES

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Objectives This study investigated the ergonomic and safety hazards of small-scale miners in one of the largest small-scale

mining area in the Philippines which is the area of Itogon, Benguet.

Methods There were 93 small-scale miners who were included in the study as they complied with the inclusion criteria. The methods consisted of survey questionnaires, health physical examination guide, individual interviews, and work process observation tool.

Results The results showed that the small-scale miners worked for an average of 10.7 years, and a maximum work year of 40. The most widely employed mining technique was the dog-hole mining consisting of several sub-processes -tunneling, ball milling and gravity concentration, cyanide leaching, and smelting. The ergonomic and safety hazards identified were noise exposure from the dynamite blast, temperature extremes, and exposure to dust from dynamite blasting. The miners experienced prolonged crouching and bending, prolonged handling of tools, and carrying heavy sacks filled with mineral ores. In the ball milling and gravity concentration process, machine-related accidents were noted such as experiencing cuts from the crusher. In the cyanide leaching which uses massive amounts of cyanide, the most prevalent hazards were heat, dust, and chemicals such as cyanide fumes. In the smelting process, smoke from burning ore and coal as well as exposure to borax and nitric acid fumes. Burn injuries were reported among miners. A third (31.2%) of miners have experienced accidents. The most common injury was laceration at 47.8%, followed by methane inhalation, fracture of hand digits, and contusion at 17.4%.

Conclusion The most prevalent health symptom reported by the miners was muscle pain which points to exposure to ergonomic hazards and risks.

O-120

UNDER-REPORTING OF NON-FATAL OCCUPATIONAL INJURIES AMONG PRECARIOUS AND NON-PRECAARIOUS WORKERS IN SWEDEN

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Introduction Data are lacking on under-reporting of occupational injuries (OI) among precariously employed workers in Sweden, challenging effective surveillance of OI and targeted preventive measures.

Objective To estimate the magnitude of under-reporting of OI among precarious and non-precarious workers in Sweden in 2013.

Methods Capture-recapture methods were applied using the national OI register and records from a labour market insurance company. All employed workers 18–65 resident in Sweden in 2013 were included in the study. Injuries were linked using personal identification numbers. Employment data were obtained from the national labour market register to construct precarious employment level, while injury severity (no healthcare/only outpatient/hospitalised) was constructed with data from the National Patient Register. Under-reporting estimates were computed stratifying by OI severity and by socio-demographic factors, occupation and precarious employment level.

Results Overall, under-reporting of OI was consistently higher across all socio-demographic factors for the very precarious

group (very PER), followed by the precarious group (PER) and lastly the standard employment relationship group (SER). Under-reporting was higher among females compared to males (17.8%, 95% confidence interval (CI) 17.4–18.3), and younger compared to older workers (19.8%, 95% CI 18.6–21). Notably under-reporting increased with educational level across all employment groups (20.9%, 95% CI 20.0–21.9). Under-reporting of the OI decreased as injury severity increased and was higher with highest level of precariousness in all groups of severity.

Conclusions This is the first register-based study in Sweden to empirically demonstrate that under-reporting of OI is higher among precariously employed workers. OI under-reporting may represent unrecognized injuries that especially burden precariously employed workers' financial, health and social outcomes, shifting consequences from the employer to the employee.

O-157

EFFECT OF EXPOSURE TO PSYCHOSOCIAL WORK FACTORS ON THE OCCURRENCE OF WORKPLACE INJURIES

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Objective To determine the effect of psychosocial factors (PSF) on the incidence of workplace injuries (WI) among workers from of the French two-waves survey 'Health and Career paths'. A second objective was to explore effects of gender and age.

Methodology The outcome considered here was the occurrence of WI between 2006 and 2010, reported by participants. Nineteen self-reported PSF, evaluated in 2006, explored six domains: labour intensity and working time (9 items), emotional demand (3), autonomy (2), social relationships at work (2), conflict of values (2), and job insecurity (1). Multiple logistic models were performed for each PSF. Interactions between PSF and respectively gender and age class ($\leq 30y.$, $30-50y.$, $\geq 50y.$) were tested using Wald test.

Results The study population consists in 3,277 men and 3,565 women in employment in 2006 and re-interviewed in 2010. Over the period, 255 workers reported at least one WI, corresponding to an annual average rate of 6 WI/1000 workers. PSF associated with the incidence of WI were mostly related to emotional demand, social relationship at work and labour intensity. The risk of WI was greater in women reporting difficulties reconciling work and family life, tensions with public, necessity to hide or fake emotions or lack of reward, and in men reporting more than 48 h/week, irregular working hours or fear for own safety or for safety for others during work. Participants under 30y. reporting tensions with public, necessity to hide or fake emotions, or fear for own safety or for safety for others during work had a greater risk of WI than the others.

Conclusion These results provide evidence for relationships between PSF exposure and the occurrence of WI. In particular, the risk of WI was greater in participants reporting exposure to emotional demand at work and varied according to gender and age.