Contributed by occupational risk factors to 7-year follow-up in a young adult population

Material and Methods We aimed to fill in this knowledge gap by investigating a cohort of over 2,000 employees of the Regional public transport sector in Sardinia, Italy. Incident COVID-19 cases were identified between 1 September 2020 – 6 May 2021 by real-time reverse transcription-polymerase chain reaction tests performed on nasopharyngeal swabs during periodic occupational health surveillance. We applied the age- and gender-specific COVID-19 incidence rates in the regional population at the same time frame to the corresponding strata of the study cohort to calculate the expected COVID-19 events. Age- and gender-adjusted relative risks (RRs) of COVID-19 and relative 95% confidence intervals (95% CIs) were estimated as the ratio between the observed and the expected events for the overall cohort and in two sub-cohorts: bus drivers and the rest of the workers (including administrative staff).

Results Male bus drivers showed an increased COVID-19 risk (RR = 1.4, 95% C.I. 1.07 – 1.79). There was no excess risk among the rest of the personnel. Women were too few to allow reliable risk estimates.

Conclusions Our study suggests an excess risk of COVID-19 among bus drivers even in a relatively low incidence area, which could imply inadequacy of occupational preventive measures. Further larger studies, with detailed information on occupational and personal determinants, are warranted to disentangle the underlying causal factors and focus preventive strategies.

Abstracts

Contribution of occupational risk factors to lifespan inequalities across socio-occupational groups in France

Introduction and Objective Occupational risk factors can mediate the effect of socioeconomic status on mortality; however, the reduction in social disparities in mortality that could be achieved by modifying employment and working conditions has been under-studied. Our aim was to quantify the role of occupational risk factors due to large data gaps, show that improving employment and working conditions would substantially lessen social inequalities in life expectancies.

Health disparities

7-year follow-up in a young adult population at risk of Mesoamerican nephropathy

Introduction Mesoamerican Nephropathy is a leading contributor to premature mortality in Central America, but the primary cause remains unclear. Early disease is challenging to identify given variation in eGFR both within and between healthy individuals and absence of haematuria or proteinuria. We explored the incidence of CKD (stage 3–5) as well as evidence of early kidney injury in the at-risk population from Northwest Nicaragua.

Method We conducted a community-based longitudinal study of two cohorts of adults aged 18–30 (n=3,511 and 420) over 7- and 3-years respectively. We estimated the time point of departure from a healthy eGFR distribution to indirectly capture timing of early kidney injury. We then examined exposure associations with (i) time to CKD and (ii) early kidney injury.

Result CKD occurred in men only (male incidence rates of 0.8%/year and 0.6%/year in the two cohorts). 53 men (14%) and 8 women (3%) developed early kidney injury. Cumulative time in sugarcane work and symptoms of excess occupational sun exposure associated with incident CKD. Measured and self-reported weight loss, nausea, vomiting and cramps along with excess occupational sun exposure and non-steroidal anti-inflammatory use associated with early kidney injury.

Conclusion The burden of CKD in this population is high and risk factors for established disease are occupational. A clinical syndrome suggesting an alternative exposure is associated with...
early kidney injury, supporting separate initiating and exacerbating factors. Further investigating episodes of early kidney injury will facilitate efforts to uncover the initiating factor. Meanwhile interventions to reduce the impact of exacerbating factors should be vigorously pursued.

Radiation

NEW RESEARCH ON THE CONTINUED HEALTH BURDENS OF URANIUM MINERS: IMPLICATIONS FOR WORKERS COMPENSATION IN THE UNITED STATES

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Introduction The US Radiation Exposure Compensation Act (RECA) provides compensation to some workers whose health was affected by uranium industry employment. Originally scheduled to terminate in 2022, the US government recently extended RECA benefits for two more years. Another RECA amendment proposes to extend the deadline further, defines additional compensable diseases, and expands eligibility to more contemporary uranium miners.

Materials and Methods Researchers at NIOSH conduct extended follow-up on the cohort of US Colorado Plateau uranium miners, and participate in the international Pooled Uranium Miners Analysis (PUMA). Here we apply our recent research findings from both studies to contextualize the health burdens faced by surviving uranium miners, and examine how our research findings relate to the proposed extension and expansion of RECA.

Results Former US uranium miners die of silicosis (Standardized Mortality Ratio (SMR)=41.4; 95%CI:30.9–54.3), pneumoconiosis (SMR=39.6; 95%CI:29.3–52.3), idiopathic pulmonary fibrosis (SMR=4.8; 95%CI:3.7–6.1), and lung cancer (SMR=4.5; 95%CI:4.2–4.9) at higher rates than expected. These mortality excesses continue to be observed in recent calendar years. In the PUMA study, uranium miners had higher rates of lung, liver, larynx, stomach, and pleural cancers than expected, and miners hired in later periods also had higher rates of lung and stomach cancer than expected. A positive association between radon exposure and lung cancer mortality is seen in the full PUMA cohort as well as in the sub-cohort of more contemporary miners.

Conclusions Recent analyses suggest there are more US uranium miners who develop compensable diseases after the planned termination of RECA benefits in 2024. Uranium miners die at elevated rates from several cancer types that are not currently compensable. Contemporary uranium miners who are ineligible for compensation due to their employment dates experience many of the same health hazards as early-period miners. The proposed amendments to RECA are generally consistent with recent scientific results.

COVID 19

DIFFERENCES AND SIMILARITIES OF OCCUPATIONAL RISK FACTORS FOR COVID-19 ACROSS WAVES OF THE PANDEMIC; EXTENDED FOLLOW-UP OF THE COVICAT COHORT

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Introduction During the first pandemic lockdown in Spain certain workers have been at increased risk of COVID-19. Results from published studies are heterogeneous, possibly due to differences in public health interventions, availability of personal protective equipment (PPE), virulence of variants of concern, population-wide immunity or methodological issues.

Methods The COVICAT study (IEC approved) pooled ongoing population-based cohort studies from Catalonia. Occupational analyses of COVICAT were restricted to working age and included 8,422 participants, of which 3,563 were tested for SARS-CoV-2 antibodies during the first wave; study participants were re-contacted in mid-2021. Participants responded to a web-based or telephone survey including questions on socio-demographics, pre-pandemic health, behavioural and environmental risk factors. Occupational questions covered mode of work, job title, PPE, and mode of commuting. COVID-19 cases were defined by self-reported symptoms or hospitalisation and SARS CoV-2 seropositivity. Association of concern, population-wide immunity or methodological issues.

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Results The relative risk (RR) for COVID-19 for working at the usual workplace compared to telework was 1.83 (95% CI: 1.05, 2.38), and 1.63 (95% CI: 1.05, 2.52) among the serology study participants. The RR by job title was increased for all health care workers and highest for personal health care workers in health services (6.19; 3.71, 10.33); PPE was associated with a 50% increase in COVID risk. Results for the extended follow-up were stratified by pandemic waves.

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Conclusions The extended follow-up of the COVICAT cohort provides data to illuminate occupational risk factors for COVID-19 infection over time, which may contribute to explain heterogeneities across countries.