evidence-based and cost-effective preventive policies and actions, ultimately contributing to reducing the burden of NCDs. This presentation will present the EPHOR design and approach as well as some developments so far.

S-136 OMEGA-NET INVENTORY OF OCCUPATIONAL COHORTS

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Introduction Existing cohort studies in Europe capturing some type of occupational information enrol tens of millions of persons. There are few large-scale analyses systematically combining cohorts from this extraordinary resource, and a systematic approach to facilitate the use of cohorts across research groups and countries is needed.
Objectives As part of the ongoing OMEGA-NET COST Action, we created an online inventory of cohorts (https://occupationalcohorts.net/) with occupational information in Europe and worldwide and implemented an interactive search tool with detailed information on these cohorts. The inventory aims to collect information that facilitates collaboration across cohorts to explore occupation, work related exposures and health relationships.
Methods The inventory includes prospective or retrospective cohorts, case-control studies nested within cohorts and intervention studies that: (i) are active or can substantiate that their data are potentially accessible; (ii) collect data on occupation and/or industry or at least one occupational exposure; and (iii) have at least one follow-up either already conducted or planned. The inventory only incorporates cohort meta-data. Researchers enter information regarding their cohort using a web-based OMEGA-NET inventory questionnaire. The published version of the inventory is stored in a searchable web database.
Results To-date the inventory includes information on > 130 cohorts in more than 20 countries. Information is collected on: (i) Identification and basic description; (ii) Follow-up; (iii) Occupational exposures (dusts and fibres, solvents, pesticides, metals and metal oxides, other chemicals, engineered nanoparticles, biological factors, physical agents, ergonomics, physical workload and injury, psychosocial domains, organisation of work and working time); (iv) Outcomes evaluated; (v) Biological samples and analysis; (vi) Other information e.g. sociodemographic.
Conclusion The OMEGA-NET inventory will continue to identify and invite cohorts and seeks to capture the majority of available active cohorts with information on occupational exposures, many of them being non-occupational in their primary aim.

S-141 OCCUPATION AND COVID-19 MORTALITY IN ENGLAND: A NATIONAL LINKED DATA STUDY OF 14.3 MILLION ADULTS

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Introduction The coronavirus pandemic has been particularly severe in the UK, with high infection and death rates, including among working age population.
Objective To estimate occupational differences in COVID-19 mortality, taking into account confounding factors, such as regional differences, ethnicity, education, deprivation and pre-pandemic health.
Methods We used data on 14,295,900 individuals who completed the UK Census in 2011, who were alive on 24 January 2020, were employed and aged 31–55 years in 2011. Data were linked to death and other health records. We examined differences between occupational groups in the risk of COVID-19 death from 24 January to 28 December 2020. We estimated age-standardised mortality rates per 100,000 person-years at risk stratified by sex and occupations. To estimate the effect of occupation due to work-related exposures, we used Cox proportional hazard models to adjust for confounding factors.
Results There is wide variation between occupations in COVID-19 mortality. Several occupations, particularly those involving contact with patients or the public, show three- or four-fold risks. These elevated risks were greatly attenuated after adjustment for confounding and mediating factors. For example, the hazard ratio (HR) for men working as taxi and cab drivers or chauffeurs changed from 4.60 [95%CI 3.62–5.84] to 1.47 [1.14–1.89] after adjustment. The overall HR for men working in essential occupations compared with men in non-essential occupations changed from 1.45 [1.34 - 1.56] to 1.22 [1.13 - 1.32] after adjustment. For most occupations, confounding and other mediating factors explained about 70% to 80% of the age-adjusted hazard ratios.
Conclusions Working conditions are likely to play a role in COVID-19 mortality, particularly in occupations involving contact with COVID-19 patients or the public. However, there is also a substantial contribution from non-workplace factors, including regional factors, socio-demographic factors, and pre-pandemic health.

S-143 RISK OF ASTHMA AMONG PROFESSIONAL CLEANERS IN DENMARK – RESULTS FROM A MATCHED REGISTER-BASED COHORT STUDY

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Introduction Epidemiological studies indicate an increased asthma prevalence among cleaning professionals compared to other jobs.
Objectives In a multi-disciplinary project in Denmark on spray cleaning products we investigated the risk of asthma among professional cleaners in a nationwide population-based register study.
Methods In a register-based matched cohort study, 16–50 year-old professional cleaners were identified according to yearly assigned job and industrial codes for cleaning. The references was workers with other manual jobs/service workers. Asthma was defined from national registers on hospitalisation and prescribed asthma medication (person years: cleaners = 1,014,893; references = 2,777,052). The associations between recent (previous year) and preceding cumulated

cleaning years and incidences of asthma were estimated using Poisson regression analysis. The analyses were repeated in an inception cohort among workers aged 16–20 years at start of follow-up (person years: cleaners = 153,549; references = 423,506).

Results The risk of asthma was not increased for recent cleaning compared to references (adjusted incidence rate ratio [aIRR]=1.02 [95% confidence interval (CI) 0.99–1.04]). Similar results were seen for recent cleaning in the inception cohort. Cumulated cleaning years (up to 10 years) showed decreased risk of asthma (aIRR = 0.74 [95% CI 0.63–0.88] for 10 compared to 1 year of cleaning). However, in the inception cohort (up to 6 years) cumulated cleaning years were associated with increased asthma risk (aIRR=2.53 [95% CI: 1.38–4.64] for 6 compared to 1 cleaning year).

Conclusion In this study, asthma risk increased with cumulated years of cleaning in the inception cohort. This indicates a strong healthy worker selection and suggests that long-term professional cleaning may be associated with increased risk of asthma. However, in the full population we could not confirm that recent work within cleaning was associated with increased risk of asthma; furthermore, cumulated years of cleaning was inversed associated with asthma.

S-145 USE OF MECHANISTIC EVIDENCE FROM OCCUPATIONAL STUDIES IN CANCER HAZARD IDENTIFICATION: THE EXPERIENCE OF THE IARC MONOGRAPHS PROGRAMME

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Over the past 50 years, the Monographs Programme of the International Agency for Research on Cancer (IARC) has evaluated the potential carcinogenic hazard of more than 1000 agents. Through 129 volumes, 121 agents have been classified as 'carcinogenic' (Group 1), 89 as 'probably carcinogenic' (Group 2A), 318 as 'possibly carcinogenic' (Group 2B), and 499 as 'not classifiable as to carcinogenicity' (Group 3). Many Group 1 agents derived their 'sufficient evidence of cancer in humans' from studies of exposed workers. Since 1991, it has been possible to classify an agent in Group 1 based on strong mechanistic evidence in exposed humans and sufficient evidence from cancer bioassays when human cancer evidence was less-than-sufficient. In the recently revised Preamble for the IARC Monographs, mechanistic evidence has gained increased prominence as an individual evidence stream, reflecting advances in mechanistic toxicology and molecular epidemiology. The Preamble revision introduces new possibilities for carcinogen identification from robust mechanistic studies in exposed humans. Specifically, strong evidence that an agent exhibits 'key characteristics' (KCs) of carcinogens in exposed humans can lead explicitly to a Group 2A evaluation when evidence of cancer in humans is limited. Further, classification in Group 2B can be based on strong evidence of KCs in exposed humans alone. Thus, especially for agents for which cancer studies in experimental systems are impracticable (e.g., work as a firefighter), mechanistic studies in exposed humans can increasingly play a crucial role in cancer hazard identification. We will address critical aspects of study design, exposure assessment, and KC-related endpoints anticipated to be influential in future Monographs evaluations of mechanistic studies. We will draw examples from mechanistic studies in workers that contributed substantively to previous Monographs evaluations, and from ongoing occupational studies of agents accorded high priority for future evaluation by the IARC Monographs (e.g., carbon nanotubes).

S-153 NIGHT SHIFT WORK INTERVENTIONS – WHAT DO WE NEED TO KNOW TO MAKE A DIFFERENCE?

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In a modern society, night shift work is inevitable in many sectors including healthcare, industry and transport, and it is important to reduce the potential harm by preventing negative effects for health and safety from night shift work.

This presentation is part of the symposium 'Night shift work research: what we need to know to make a difference?'. The aim of the symposium is to present evidence on night work and chronic disease risk and to identify and discuss how to move forward in etiological and prevention research to provide conclusive evidence for action.

Night shift work interventions can be defined as change strategies with the purpose to reduce health and safety risks associated with night shift work. They may be directed towards the organization or towards the individual and may address different possible mechanisms linking night shift work to health and safety risks.

An example of an intervention directed towards the organization is changes in scheduling of night shift work e.g. changes in number of consecutive night shifts; duration of shift intervals; or shift duration, which are all known to be associated with possible mechanisms linking night shift work to disease and accidents. Examples of interventions directed towards the individual are light interventions, which are related to experience of fatigue and diurnal disruption, and sleep hygiene interventions aimed at reducing the negative impact of night shift work on sleep duration and quality.

This presentation contributes to the following panel discussion on what do we need to know in order to implement such prevention measures by presenting relevant examples of possible interventions. Particular focus will be on what is known about success and barriers for implementation of interventions based on our own and others research.

S-176 SOCCER 2.0 AND SOCCER IN THE FIELD: MOVING FROM CODING OCCUPATION AFTER DATA COLLECTION TO CODING IN REAL TIME BY STUDY SUBJECTS

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Objective Free-text job descriptions from lifetime occupational history questionnaires are the starting point for nearly all occupational exposure assessment activities in epidemiologic studies. This information is used to code job descriptions into standardized occupation classification (SOC) systems. We describe updates to SOCcer, an algorithm that incorporates