also result in reduced quality of life and employment opportunities for the worker. Despite this considerable burden, there is little understanding of occupational noise exposure on a national scale. Recognition of occupational noise exposure is particularly important for small businesses which employ the majority of workers, and are less likely to monitor occupational health concerns.

We undertook a national phone survey of nearly 5000 workers in Australia using our validated online application, OccIDEAS. In order to mirror a dosimeter survey, each person was asked about their last working day. Each worker was allocated one of 52 job-specific modules which contained questions about relevant tools, tasks and the time spent on each tool/task. The answers were linked to a custom database containing typical noise levels for each tool/task. Partial noise exposures were calculated, added and normalised to an eight hour shift.

On their previous working day, 16% of respondents (23% of males and 7% of females) had an estimated exposure (LAeq,8h) equal to or over the recommended exposure limit of 85 dB. Of those exposed above the limit, 80% were males. A substantial proportion of those exposed above the exposure limit reported that they did not wear hearing protection at all during the day.

These results can be used to target interventions at particular occupational and demographic groups to reduce the incidence of NIHL in the future.

Oral Presentation

Exposure Assessment

0352 DOES THE SIZE OF A COMPANY MAKE A DIFFERENCE TO THE PREVALENCE OF EXPOSURE?

¹Lin Fritsch*, ¹Sonia El-Zaemey, ¹Ellie Darcey, ¹Alison Reid, ²Lesley Rushton, ³Damien McElvenny. ¹Curtin University, Perth, Australia; ²Imperial College, London, UK; ³Institute of Occupational Medicine, Edinburgh, UK

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About two-thirds of workers in high-income countries work in micro (<5 employees) small (5–20 employees) and medium (20–200 employees) sized companies. Nevertheless, regulatory bodies and many research projects predominantly work with large companies (>200 employees) perhaps because they are more convenient to study. For example, a survey of exposure to silica in the UK undertook 44 site visits, with none of the visits involving sole-trader or micro companies.

We undertook a national population-based survey of nearly 5000 Australian workers to examine the occupational prevalence of exposure to 27 asthmagen groups. Seventy percent worked in companies with <200 workers and nearly 20% worked in micro-companies. The overall prevalence of any exposure showed no trend with company size. However, there was considerable variation by agent. For example, flour exposure was most common in medium and small companies,

while epoxy and isocyanate exposures were most common in micro companies. The prevalence of exposure was highest in large companies for only 5/27 asthmagen groups and, except for industrial cleaning and sterilising agents, these were relatively rare exposures (medications, ethylene oxide, reactive dyes, and flowers).

Our study shows that taking a population-based approach in studies describing exposure is likely to give a better overall picture of where the majority of people are exposed to the hazards. This approach permits the targeting of prevention to the places where we can benefit the greatest number of workers. Nationally-representative studies are needed to ensure that our understanding of occupational exposure is based on evidence, not convenience.

Poster Presentation

Cancer

0353 NAVIGATING CANCER AT SEA – AN EXTENDED FOLLOW-UP ON CANCER INCIDENCE IN A DANISH COHORT OF SEAFARERS

Kajsa Petersen*, Julie Volk, Johnni Hansen. *The Danish Cancer Society Research Centre, Copenhagen, Denmark*

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Objective As the traditional perils at sea counting shipwrecks, accidents, piracy and infectious diseases have subsided at least for ships embarking from the Western world, the burden of cancer among seafarers has emerged as a focus point for further health improvements. Even aboard modern ships, occupational hazards are numerous and the aim of this study is to offer updated information on the incidence of specific cancers among both male and female Danish seafarers.

Method All seafarers employed on Danish ships during 1986–1999 were identified through records from the Danish Seafarer Registry providing a cohort of 33 340 men and 11 291 women. Using the unique Danish personal identification number, information on cancer and vital status was linked to cohort members from the Danish Cancer Registry and the Danish Civil Registration System. Standardised incidence ratios for specific cancers were estimated using national rates.

Results Compared to the general population, the overall incidence of cancer was increased for both male and female seafarers (SIR 1.16, 95% CI 1.13–1.20 and SIR 1.12, 95% CI 1.05–1.20). This excess was primarily driven by increases in gastrointestinal, respiratory and urinary cancers among the men, while the women also had increases in cervical and ovarian cancer. The SIR for melanoma of the skin and lip cancer was increased for women and men respectively, while an excess of pleural cancer only affected the men.

Conclusion Cancer among Danish seafarers continue to be primarily lifestyle-related. However, occupational exposure to UV-radiation, asbestos and other chemicals may affect the morbidity pattern as well.

Oral Presentation

Cardiovascular Disease

0354 INCIDENCE OF CARDIOVASCULAR DISEASE AMONG DANISH FIREFIGHTERS – A COHORT STUDY

¹Julie Elbæk Pedersen*, ²Kajsa Petersen, ¹Niels Ebbelhøj, ¹Jens Peter Bonde, ²Johnni Hansen. ¹Department of Occupational and Environmental Medicine, Bispebjerg University Hospital, Copenhagen, Denmark; ²The Danish Cancer Society Research Centre, Copenhagen, Denmark

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Objectives To explore the incidence of selected diagnoses of cardiovascular diseases (CVD) among 11,691 male Danish firefighters, including the relative risk among different exposure groups.

Methods Trade unions, with firefighter membership records, Danish municipalities and private companies covering firefighting assignments supplied historical employment records to this study. The Supplementary Pension Fund Register, with information on all employees in Denmark, was used to establish two occupational reference groups: a) a random sample from the employed male population and b) the military. Information on CVD, 1977–2014, was retrieved from the Danish National Patient Registry. Age and calendar standardised incidence rates (SIR) were estimated using reference group rates.

Results The number of observed cases significantly exceeded the expected number for all cardiovascular diseases combined when firefighters were compared with both references. Significantly increased SIRs were also observed for angina pectoris (1.16, 95% CI=1.08–1.24), acute myocardial infarction (1.16, 95% CI=1.06–1.26), chronic ischaemic heart disease (1.15, 95% CI=1.06–1.24) and atrial fibrillation/flutter (1.25, 95% CI=1.14–1.36) compared with the general working population sample. When comparing the firefighters with the military, results reflected the same pattern. In subgroup analyses, the risk of CVD was elevated for full-time employed firefighters, but decreased with increasing duration of employment.

Conclusion Our study indicates a modest elevated CVD incidence among Danish firefighters. This study is the first large cohort study exploring the association between firefighting and CVD incidence, and more studies including more detailed information on "dose" of firefighting and potential confounding factors are warranted.

Poster Presentation

Specific Occupations

0355 MORTALITY IN A COHORT OF DANISH FIREFIGHTERS

¹Kajsa Petersen*, ¹Julie Elbæk Pedersen, ²Jens Peter Bonde, ²Niels Ebbelhøj, ¹Johnni Hansen. ¹The Danish Cancer Society Research Centre, Copenhagen, Denmark; ²Department of Occupational and Environmental Medicine, Bispebjerg University Hospital, Copenhagen, Denmark

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Objective Firefighters are exposed occupationally to a complex range of potential health threats including toxic chemicals, shift work, excessive heat, physical and emotional strain. The

aim of this study is to examine the resulting pattern of mortality among Danish firefighters.

Method Past and present male Danish firefighters were identified through systematic collection of personnel and membership records from employers and trade unions from the entire country (n=11,529). Using the unique Danish personal identification number, information on additional employment, vital status and cause of death was linked to each member of the cohort from the Supplementary Pension Fund Register, the Danish Civil Registration System and the Danish Register of Causes of Death. Standardised mortality ratios (SMRs) were calculated for specific causes of death using rates for two selected reference groups, a sample of the working population and military employees respectively.

Results Compared to both the sample of the working population and the military, overall mortality was significantly reduced among the firefighters (SMR 0.74, 95% CI 0.69–0.78 and SMR 0.87, 95% CI 0.82–0.93). In addition, the SMRs for mental disorders, endocrine disorders, suicides, accidents and other external causes were significantly reduced against both reference groups.

Conclusion Despite possible exposure to numerous occupational hazards, male Danish firefighters have a significantly lower mortality compared to both a sample of the Danish working population and the military.

Poster Presentation

Psychosocial

0356 JOB STRAIN IN MANAGERS AND WORKPLACE SOCIAL CAPITAL: A CROSS-SECTIONAL STUDY FROM THE DANISH PUBLIC SECTOR

Line Leonhardt Laursen*, Søren Grove Vejstrup, Jens Peter Bonde, Johan Høy Jensen. Department of Occupational and Environmental Medicine, Copenhagen University Hospital, Bispebjerg, Copenhagen, Denmark

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Background Research indicates that stressed managers could be harmful for employee wellbeing. Social capital is a construct to address the psychosocial work environment. To our knowledge no study has investigated the relationship between stressed managers and workplace social capital.

Objective This study examines the association between managers' perceived job strain and workplace social capital.

Methods Population includes all employees in the Capital Region of Denmark in 2014 (n=37,720) nested within work units (n=2499). Information on the psychosocial work environment was obtained by a web-based questionnaire (response rate 84%). Work unit managers reported job strain (high job demands/low job control) on a 7-item 5-point Likert scale. Social capital was reported by employees on an 8-item 5–7 point Likert scale and computed to an aggregated work unit score. The risk of employee rated social capital (lowest quartile) according to managers' perceived job strain was examined by logistic regression adjusting for characteristics of managers (gender, age, occupation, seniority) and work units (size (weighted), gender ratio, mean age).

Preliminary results The risk of low work unit social capital increased when the manager reported higher levels of job strain: for each unit increase of job strain (scale 1–5), the