during the hottest month may rise to over 400 million at the end of this century from the current value of less than 1 million. At country level we find up to 2–4% of current daylight work hours are too hot for almost any work at moderate intensity. Our impact assessment model incorporates climate conditions, location of work (in sun, in shade or indoors), work intensity, and age distribution of the local population. Further developments of the model will be discussed.

Poster Presentation

Occupational Medicine (SCOM/Modernet)

0399 INDIVIDUAL SENSITIVITY. HOW SHOULD OCCUPATIONAL HEALTH RESPOND? (SUBMITTED FOR THE SCOM DAY)

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The requirement for occupational radiation doses to be As Low As Reasonably Achievable (ALARA), promulgated by the International Commission on Radiation Protection in 1977, transformed radiation protection practice. It also led the way to develop similar standards for a range of occupational hazards.

The radiation world is now increasingly recognising the relevance of individual sensitivity to ionising radiations, with the real prospect that this will be incorporated into future occupational protection standards. The key drivers are;

- a. Known genetic sensitivity, and gene testing is feasible.
- b. Radiation risk relates to general cancer risk, including lifestyle.
- c. Some specific risks may be much higher in human subgroups.

Individual sensitivity to other occupational hazards is well established, but little acknowledged. Genetic factors are linked to a wide range of occupational diseases, including those from physical, chemical, biological and even psychological exposures. In relation to lifestyle, there is a synergy between the more than additive effects of radon and asbestos when either is linked with cigarette smoke. We are also aware high occupational risk in subgroups, for example; Type 1 hypersensitivity to Latex being almost exclusively restricted to the strongly atopic.

The ethical, scientific and practical difficulties of standards based on individual sensitivity are huge, with the strong possibility that restricting consideration to radiation induced cancer would not provide a model that is relevant throughout occupational health. It is suggested that ICOH should seek to join with ICRP in setting up a system to look at the issue in its entirety.

Oral Presentation

Cancer

0400 OCCUPATIONAL AND ENVIRONMENTAL RISK FACTORS FOR PROSTATE CANCER IN HONG KONG

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Objectives Influence of environmental exposures on prostate cancer remains largely unclear. We aimed to document the associations of occupational and environmental risk factors with prostate cancer in Hong Kong using a case-control study.

Methods We consecutively recruited 431 incident prostate cancer cases and 402 controls to obtain information on occupational and environmental exposures using a standard questionnaire, including smoking, dietary habits, family cancer history, night shift work, use of detergents and pesticide, and lifetime usage of food containers. We developed a new assessment tool of environmental BPA exposure and created a novel cumulative BPA exposure index (CBPAI). Odds ratio and 95% confidence interval (95% CI) was performed using multiple logistic regression analysis.

Results Family history of prostate cancer was more common in cases (9.5%) than controls (3.0%), showing an adjusted OR of 3.68 (95% CI: 1.85–7.34). Weekly consumption of deep fried food and picked vegetable was associated with an excessive prostate cancer risk by 85% (95% CI: 15%–195%) and 87% (7%–228%). Night shift work was hazardous (OR=1.76, 95% CI: 1.07–2.89) but habitual green tea drinking was protective (OR=0.56, 95% CI: 0.34–0.91). A positive exposure-response relationship with CPBAI and prostate cancer was observed.

Conclusions This study demonstrated an overall picture of occupational and environmental risk factors to prostate cancer among Hong Kong Chinese men. Furthermore, this study provided the first epidemiological evidence on carcinogenicity of BPA on human prostate thus added breakthrough data into the literature.

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Oral Presentation

Dusts and Fibres

0402 DOES LUNG CANCER INCIDENCE AND MORTALITY DIFFER WITH THE TYPE OF ASBESTOS FIBRE? : EVIDENCE FROM WESTERN AUSTRALIA

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Background Crocidolite is known to be the most carcinogenic form of asbestos for mesothelioma. This study aimed to assess if there was a difference between crocidolite and mixed asbestos fibre exposure for rates of lung cancer incidence and mortality after adjusting for smoking.

Methods Administrative datasets were used to identify lung cancer incidence and deaths in three Western Australian cohorts of people exposed to: crocidolite as miners and millers at Wittenoom; crocidolite as residents of Wittenoom; and mixed asbestos fibres occupationally. Multivariable Poisson regression models were used to compare the 5 year incidence and mortality rates between these cohorts after starting a health surveillance program. Explanatory variables included radiological evidence of asbestosis and cumulative asbestos exposures as determined through our Asbestos Job-Exposure Matrix (AsbJEM) after adjusting for smoking pack years, time since smoking cessation, age and sex.

Results The 5 year lung cancer incidence (n=176) and mortality (n=125) rates increased with radiological evidence of asbestosis (2.4-fold), increasing cumulative asbestos exposure and smoking pack-years. Compared with crocidolite miners and millers, Wittenoom ex-residents had the lowest rates (Incidence Rate Ratio (RR): 0.31, 95% CI: 0.15–0.67; and Mortality RR: 0.39 95% CI: 0.17–0.88). However, there were no significant differences identified between people occupationally exposed to mixed asbestos fibres (Incidence Rate Ratio (RR): 0.92, 95% CI: 0.61–1.39; and Mortality RR: 1.07 95% CI: 0.66–1.73) and Wittenoom workers.

Conclusion Mixed asbestos fibre exposure seems to be an equally potent cause of lung cancer as crocidolite after adjusting for smoking history.

Oral Presentation

Occupational Medicine (SCOM/Modernet)

0403 FINDINGS FROM THE FIRST YEAR OF MAREL: THE ITALIAN NETWORK ON WORK-RELATED DISEASES

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Background Detecting new disease-exposure associations is an important public health issue. We created a pilot network (MAREL - MALattie e Rischi Emergenti sul Lavoro) of occupational disease consultation centres of Italian university hospitals to which patients are referred for potentially work-related diseases.

Methods The MAREL network currently includes five occupational disease consultation centres of university hospitals located in central-northern Italy. Patients are referred to these consultation centres by their general practitioners, occupational physicians or other specialists for the investigation of the putative occupational origin of the disease. Each centre collects cases of putative occupational origin through a structured and standardised data collection form. We collect data on: diagnosis; personal habits; occupational history; exposure assessment for potentially associated risk factors; physician's opinion on the possible causal relationship between disease and occupation. Data are coded according to national and international classifications.

Results The data collection started in 2016. We collected 1516 cases of putative occupational diseases. Intervertebral lumbar disc degeneration was the most represented condition (n=170, 11.2%). Apart from musculoskeletal disorders, cases of asthma were the most frequently reported (n=59, 3.9%). About 11% of patients were construction workers. The most frequently reported exposures were: manual material handling (29.5%, out of 1811), hand-arm vibrations (13.9%), and repetitive movements of the upper limb (10.9%).

Discussion The MAREL network will be expanded to other occupational disease consultation centres in 2017 with the aim to contribute to already existing surveillance systems (i.e. MALPROF) by the detection of new and emerging occupational diseases and risks.