

32nd Triennial Congress of the International Commission on Occupational Health (ICOH)

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Opening Keynote Session

1759 THE IARC MONOGRAPHS AND THE BURDEN OF OCCUPATIONAL CANCER

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This presentation will be about the triad of historical insights, scientific evidence and preventive action. By way of introduction, the history of chemical carcinogenesis (from Pott's soot to the IARC evaluation of benzo[a]pyrene as a Group 1 carcinogen based on a mechanistic upgrade) showcases the important role of occupational carcinogens in understanding the causes of cancer and related paradigm shifts, primarily over the last century. Similarly, the history of radiation carcinogenesis has significantly learned from occupational exposures and served as a foundation of environmental epidemiology.

The IARC Monographs programme is not only the longest running program of cancer hazard identification, it is also on the cutting edge of the latest scientific developments. A short history of the evolution of the program with a focus on causal inference and changing contributions from the different scientific domains (cancer bioassays, epidemiology and toxicology) will be followed by the latest developments in terms of systematic review, key characteristics of carcinogens, high through-put/high content data, and quantitative risk characterisation. The integration of evidence streams into an overall evaluation will be illustrated with a selected carcinogen.

The Monographs' evaluations often serve as the basis for the estimation of the burden of occupational cancer. Important milestones in burden estimates (from Doll and Peto, 1981, to the ongoing joint WHO/ILO undertaking) will be presented. These results are not for debates in an ivory tower of science, but here to inform public health actions, and particularly a vision of zero occupational cancers. Data on the adverse economic impact of occupational cancer together with evidence that out-phasing of occupational carcinogens like asbestos does not have negative economic impact will further support implementation of control measures and should be employed more often.

Finally, the presentation will name significant challenges on our roadmap, such as the need for better exposure data and exposure assessment, shift of funding to prevention research including occupational cancer prevention, access to data for research and management of conflict of interests.

Plenary Sessions

1773 ENVIRONMENTAL IMPACT ON WORKER HEALTH – HONG KONG EXPERIENCE

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Worker health is determined not only by occupational hazards but also by environmental factors. Chronic diseases, such as cardiovascular diseases, cancer, chronic respiratory diseases and diabetes are the leading causes of mortality worldwide, accounting for almost two-thirds of all deaths. Chronic diseases have a multifactorial etiology, such as only 10% of overall lung cancer in men and 5% in women are attributable to occupational hazards, while a majority of etiology comes from smoking and other environmental exposures. Many environmental exposures of chronic diseases are common in workers, while some of them are related to job nature and working schedule, and these may have a large impact on worker health.

This presentation focuses on some common environmental risk factors among workers and discusses their impacts on burdens of chronic diseases based on Hong Kong experience, covering the following topics (1) tobacco smoking and workplace environmental tobacco smoke and health impacts (e.g., lung cancer, metabolic syndromes); (2) environmental exposure to bisphenol A and health impacts (e.g., metabolic syndromes, prostate cancer); (3) changed sleep and diet patterns related to shift work schedule/long working hours and the health impacts based on our ongoing prospective shift worker cohort in China and Hong Kong breast cancer study. This presentation also emphasizes the importance of integrating the prevention of chronic diseases and improving worker health with the promotion of a healthy environment beyond the workplace.

1747 WHEN OCCUPATIONAL HEALTH BECOMES PUBLIC HEALTH: OCCUPATIONAL LUNG DISEASE IN MINERS

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Despite a century of surveillance of silicosis and tuberculosis in the South African gold mining industry, black gold miners were afflicted with a triple epidemic of silicosis, tuberculosis and HIV at the turn of the 21st century. Fertile ground for this new co-epidemic was provided by a migrant labour system that linked rural areas in South Africa and surrounding countries with the gold mining industry. A surge in the employment of miners and the stabilisation of employment contracts from the 1970s shifted the cumulative service curve, and hence silica exposure, upwards. Despite the availability of treatment for tuberculosis, elevated rates of tuberculosis had