

## Plenary, Semi-Plenary and Special Sessions

### Plenary Sessions

#### PL01

##### **Health inequalities in the workplace**

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As the world emerges from the COVID-19 pandemic 'Build Back Better' has become the mantra. Important, but we need to Build Back Fairer. The levels of social, environmental, and economic inequality in society are damaging health and wellbeing. Taking action to reduce health inequalities is a matter of social justice. In developing strategies for tackling health inequalities, we need to confront the social gradient in health, not just the difference between the worst off and everybody else. Inequalities in mortality from COVID-19 and these rising health inequalities as a result of social and economic impacts, have made such action even more important.

#### PL02

##### **The past as prologue: How the history of occupational illness and injury teaches us about today**

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The question posed in this presentation is not limited to "what" history teaches us about the occupational illness and in injury we see around us today but, as importantly, how does history teach us. If we gain the insights into the "how," we can be alert to the warning signals of newly emerging novel exposures or re-emerging, long-established established hazards.

The history of occupational illness and injury is fundamentally the story of the myriad of ways in which technological change modifies the ways in which the environment of employment puts workers at risk. Sometimes such change makes that environment inherently safer, but all too often there are obvious and not-so-obvious hazards that accompany the innovation. History teaches us that steam and pneumatic powered processes in the 19th century dramatically increased worker exposure to silica dust, bringing an epidemic of disease. It is not that silicosis, albeit poorly characterized, hadn't

been present long before, but it had never been on such a scale. Similarly, technologic changes have driven the histories of various "trade palsies" as they evolved into modern repetitive strain injuries, from the metal pen nib causing scrivener's palsy to wall-to-wall carpeting creating carpet layer's knee to electronic mail sorters inducing carpal tunnel syndrome. History also teaches us how we need guard against the cyclical amnesia that characterizes the recurring recognition then apparent obliviousness and failure to control obvious hazards. Examples include carbon disulfide, a potent toxicant in the 19th century rubber industry, whose introduction into the viscose rayon industry proceeded without timely, critical evaluation by occupational medicine researchers or clinicians. The history of manganese neurotoxicity also can be characterized by similar pattern of discovery flowed by forgetting. Our current "surprise" at the resurgence of silicosis in the artificial stone industry, grinding a material that is nearly 100% crystalline silica, underscores this recurrent pattern. Finally, history teaches us how we should consider the lives and work of the leaders and pioneers of the discipline that we so often laud in the historical reviews. The stories of these figures should not be hagiographies, but rather need to show how Ramazzini, Thackrah, Proust, Hirt, Hamilton and others used their own experience paired with a critical reception of transmitted wisdom, to advance the field of occupational medicine. The history of occupational medicine is enriching, It is central to our discipline. And it is ignored at our own peril.

#### PL03

##### **Effectiveness of basic occupational health services in the informal sector**

Hanifa Denny

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#### PL04

##### **Impact of the 24-hour society on workers' health and safety**

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"It's been a hard day's night, I've been working like a dog/It's been a hard day's night, I should be sleeping like a log" is part of the lyrics of the famous song by "The Beatles", released in October 1964. At

that time, very little was said about the organization of shift work, as the concern with work environment and illnesses were focused on other stressors. The fact is that 24-hour society is here to stay due to the continuous production processes and the need for uninterrupted services that are offered and necessary to the society. For the last decades thousands of publications have highlighted the negative effects of shift and night work on health, quality of life and safety at work. The dissemination of information in both scientific journals and non-scientific media reports has shown the non-glamorous and less apparent sides of the problems faced by those who work during the night, on weekends, on public and religious holidays while most of the population is resting and or enjoying free time. The intrusion of work at nighttime and consequent daytime rest lead to a biological mismatch and partly explain chronic health problems and malaise faced by shift and night workers. There are several consequences already well-studied, such as sleep, metabolic and cardiovascular disturbances, mental health symptoms, a less effective immune system and the still controversial requiring further studies- cancer development. But there are other shift work issues directly or indirectly associated with malaise, issues to be yet reconciled and solved, in addition to the biological ones. These include living and working conditions. At the occupational level, the organization of work schedules such as work hours during day and non-daytime, daily and weekly working hours, recovery time within and between shifts, how healthy the work environment is, including policies of respect and health promotion is essential and can be the source of the mentioned problems and possible solutions. Regarding safety at work, it is necessary to pay attention to sleepiness, which changes throughout the 24 hours. Interventions to improve sleep duration and quality are required to maintain alertness and adequate performance, especially during hours of greater sleepiness. It is also necessary to investigate the combined effects of environmental and organizational factors and how occupational exposures can be mitigated. My presentation will focus on several aspects related to biological, work and social issues, as well as health issues, including sleep and health of healthcare workers during the new coronavirus pandemic. The presentation will include what has now become commonplace in 24-hour society - the extension of working hours, particularly those carried out using telework environments, which are associated with domestic and professional overload. And finally, a brief comment at the future of decent work - what awaits workers who cannot follow daytime work patterns and nighttime rest? In post-pandemic times, there is hope the new labor regulations will be more equitable, leading organizations to provide greater protection and health at work for those who take care of production and services, while we, day workers, are resting.

## PL05

### **Occupational cancer: Future opportunities and challenges**

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Occupational cancer is estimated to cause 350 000 deaths and 7 million DALYs worldwide every year. These numbers, from the Global Burden of Disease project, are the best estimate we have. However, they are almost certainly underestimates, as they only include a limited number of carcinogens and are based on prevalence data from the early 1990s.

This presentation is therefore focused on these two issues: the identification of occupational carcinogens; and determining who is exposed to those carcinogens.

Identifying carcinogens is a difficult and time-consuming process. Thousands of new chemicals are introduced every year, and only a very small proportion have been assessed by any of the major international organizations. The biggest challenge to speeding up the process is the reliance on traditional epidemiological studies in humans, which need long time periods (often decades), high-quality records and measurements, and a very large stable workforce. Other approaches such as rodent and mechanistic studies, while more rapid, still require a huge investment of resources. Challenges also arise from the lack of co-ordination between the different regulatory and scientific organizations meaning that the same agents can (confusingly) be assigned different carcinogenicity ratings. An exciting opportunity in this area is the recent development of in silico or computational methods, and the push to develop internationally accepted protocols to use these tools.

Determining exposure to established carcinogens is necessary not only for identifying who is exposed to carcinogens, but also where inspection and education campaigns should be focused. Exposure assessments are traditionally in the form of individual workplace measurements by highly trained specialists using customized equipment and well-equipped laboratories. These assessments are typically conducted in large companies with in-house expertise or the funds for consultants. In the past, national bodies conducted large-scale surveys or collected measurements from representative samples of the workforce. However, with nearly two-thirds of the workforce in high income countries now working in small and medium sized enterprises, national surveys a thing of the past, and the move of many dirty industries to low-income countries, the likelihood that representative data are being collected is minimal. These challenges need to be met by a change of approach, from expert measurements to new opportunities including the development of low-cost real-time wearable devices, online applications which assess work practices of individuals, and the opportunity to collect anonymous data to provide a more comprehensive understanding of exposure patterns in the community.

There are exciting developments in the areas of identifying carcinogens and determining exposure to those carcinogens which we hope can be taken up in not only the high income countries, but also in low income countries, where the need is much greater.

## PL06

### **Emerging workplace health and safety threats—has the pandemic changed the trajectory?**

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Prior to the pandemic we imagined emerging health and safety threats in terms of the Future of Work related to the workplace, work, and the workforce. The occupational safety and health community viewed these emerging threats in terms of the impact of new technologies, globalization, changes in employment patterns, and an increasingly diverse and aging working population. While we still give considerable attribute to these influencing factors, the COVID-19 pandemic may have changed the trajectory of the threats associated with the Future of Work,