

# Abstracts

## Minisymposium 4

### Intervention research policy and practice

#### M4.1 IMPROVING THE PREVENTION AND CONTROL OF HAZARDOUS SUBSTANCE EXPOSURES: A RANDOMISED CONTROLLED TRIAL IN MANUFACTURING WORKSITES

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**Background:** New measures of exposure prevention activity were used to evaluate the effectiveness of a 16 month management focused intervention addressing hazardous substance exposures in manufacturing work settings.

**Methods:** Exposure prevention efforts were assessed using a previously published rating scheme developed for this study.<sup>1</sup> The rating scheme yields a set of measures of exposure potential and protection which are combined into an overall exposure prevention (EP) summary rating. A randomised, controlled design was used to assess intervention effectiveness. Fifteen large manufacturing worksites (mean of 721 employees) completed the 16 month intervention and follow up assessments (seven intervention and eight control sites). Analyses were conducted on the 107 production processes assessed at both baseline and final.

**Results:** Patterns of improvement within the intervention condition were consistent with the intervention emphasis on upstream or source focused intervention, whereas patterns in controls were consistent with prevalent practice (more downstream). A mixed model analysis of variance showed greater improvement in EP ratings in intervention versus controls, but the effect was moderate and statistically non-significant.

**Conclusions:** This methods development study has demonstrated that exposure prevention efforts in the manufacturing sector can be systematically assessed across the full range of hazardous substances in use, and that such assessments can serve both needs assessment and effectiveness evaluation functions. Findings suggest that more sustained or intense management focused intervention would significantly improve exposure prevention.

1. LaMontagne AD, Youngstrom R, Lewiton M *et al.* *Appl Occ Environ Hygiene* 2003;18:523–34.

#### M4.2 MOVING PREVENTION UPSTREAM: EPIDEMIOLOGY AND PRECAUTION

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This paper discusses the relevance of the precautionary principle (PP) to intervention research. The PP has four central components: (a) taking preventive action in the face of uncertainty; (b) shifting burdens onto proponents of potentially harmful activities; (c) exploring a wide range of alternatives to possibly harmful actions; and (d) increasing public participation in decision making. All four of these are relevant to effective workplace interventions to improve health and safety. The PP is sometimes portrayed as either anti-science or as a risk management principle that is implemented only after objective scientific enquiry takes place. Neither of these views is correct. Effective precautionary action

requires that study methods be appropriate to research questions, and that all available scientific information be used in policy decisions. We argue that there are ways in which the standard methods of epidemiology and related disciplines can implicitly impede precautionary action, making it more difficult for policy makers to take action in the face of uncertainty. Examples of ways in which our research methods can inhibit precautionary action include: (a) we design studies to guard more carefully against false positive results than false negative results; (b) we study risks from a single disciplinary perspective; (c) we devalue qualitative information, viewing it as of lesser quality than quantitative evidence; (d) we often focus our research on protecting the "average" individual rather than the more sensitive; (e) we study the direct effects of single exposures rather than exposures to multiple chemicals and other stressors; and (f) we formally evaluate only a small part of the uncertainty inherent in our studies, and rarely discuss the limitations in our models or present the results of sensitivity analyses. Within the bounds of good scientific practice there are a variety of methods, and some may be more or less helpful to policymakers faced with high stakes decisions and great scientific uncertainty. The PP can help intervention researchers by reminding us of the importance of choosing appropriate scientific methods for evaluating interventions, and of considering the widest possible range of alternatives.

#### M4.3 INTERVENTION RESEARCH POLICY AND PRACTICE: A VIEW FROM THE AUSTRALIAN NATIONAL OCCUPATIONAL HEALTH AND SAFETY COMMISSION

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The National Occupational Health and Safety Commission is a tripartite statutory body, the vision of which is for Australian workplaces to be free from death, injury, and disease. The National OHS Strategy 2002–2012 supports this goal and was unanimously endorsed by federal, state, and territory ministers in May 2002. NOHSC stakeholders include federal, state, and territory governments, employer and employee representatives, researchers, and professional bodies. Its role is to formulate national policies, national standards and codes of practice informed by OHS data analysis and research and stakeholder views. To ensure that policy and strategic directions are informed by evidence, NOHSC needs access to appropriate quality research. Problems with both OHS data and research can make the development of informed policy more difficult. It is acknowledged that the data sources on occupational injury and disease are often inadequate, especially for diseases of long latency. This limits our capacity to accurately estimate the magnitude and severity of the problem. Epidemiological research has helped to inform agencies such as NOHSC about agents that cause injury and disease. As a result, the need for national action to help prevent or reduce exposure to known disease causing agents is considered a key strategy. Because national data on workers' exposure to hazards is often missing, the ability to effectively target interventions where the need is greatest is limited. In addition, even where it is known that workers are exposed to hazards there is still not enough evidence about the effectiveness of interventions designed to reduce these exposures. Another challenge for OHS agencies is that when introducing policy we need to ensure appropriate developmental work has been undertaken—that is, we need research that better characterises problems and contexts. From this understanding, optimal intervention strategies can be devised. While we want to encourage workplaces to move their preventive interventions up the hierarchy of controls, away from behaviour based and PPE strategies, we do not yet know best how to encourage organisations to do this. A stronger evidence base in this regard would help us to be more effective in this role. As OHS resources are limited, intervention research can help to ensure that empirically effective strategies are used to target the most vulnerable groups of workers and where there is likely to be the maximum benefit for our efforts. In this session, the national policy actions to prevent occupational injury and disease, and specifically actions to improve data about exposure and facilitate intervention research will be outlined. The audience will be invited to engage in a discussion on additional ways to address the problems of translating OHS research into national policy.