methods should be harmonised in order to ensure consistency among prevention actions. For this purpose, INRS has developed a software named Seirich.

The methodology deployed in Seirich is part of a national agreement on prevention of chemical risk, and involves numerous partners, including the French Ministry of Labour, the Occupational Risk Directorate of Social Security and several trade organisations. This tool includes the classification and labelling of substances and mixtures according to the CLP regulation (EU regulation EC 1272/2008). The methodology includes several steps implemented as functionalities: inventorying of products and emitted substances; ranking of products and emitted substances according to their risk level; chemical risk assessment adapted to the user's degree of expertise; technical and legal advice adapted to the context; follow-up for prevention actions.

The description of the methodology and the Seirich software are available for download free of charge, via the www.seirich.fr website (in French). Since June 1 st 2015, Seirich has been downloaded by more than 15.000 companies in France and abroad and several training sessions have been organised for helping companies in chemical risk assessment with Seirich.

709 PHYSICAL AND PSYCHOLOGICAL HEALTH COMPLAINTS AFTER A MALODOROUS CHEMICAL ACCIDENT: A LONGITUDINAL STUDY

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10.1136/oemed-2018-ICOHabstracts.1044

Introduction In 2007, an oil tank in an industrial area in Norway exploded and caused a prolonged malodorous pollution. Previous studies have shown that acute physical and psychological health complaints are prevalent in populations recently affected by industrial accidents. However, follow-up studies of human health effects after such accidents are limited, and knowledge about long-term health effects among workers exposed to malodourous emissions following a chemical accident is scarce. The aim of the study was to assess whether subjective health complaints among employees in the industrial area and clean-up workers declined over a four-year period after an oil tank explosion, a period that included removal of the malodorous pollution.

Methods A longitudinal survey from 2008 (1 ½ years after the explosion) to 2012 (5 ½ years after the explosion) was performed using the Subjective Health Complaints Inventory, a validated questionnaire. Data were analysed using a linear mixed effects model.

Results In 2008, exposed workers (n=147) had significantly more health complaints such as headache, tiredness, sleep problems, dizziness and depression, compared to unexposed controls living far away from the explosion site (n=137). In 2012, there was a reduction of subjective health complaints among the exposed workers, but they still had significantly more subjective neurological symptoms ($p<0.01$) than controls, adjusted for gender, age, smoking habits, educational level and proximity to the explosion.

Discussion It is likely that the overall decrease of subjective health complaints among exposed workers could be due to decreased exposure to malodorous pollutants or time passed since explosion. However, the persistent subjective neurological complaints might be mediated by perceived pollution and health risk perception. Worry might have caused a chronic effect, manifested by a dysfunctional and persistent neuropsychological response. A possible implication is that quick clean-up of malodorous chemical spills is important to avoid persistent health effects.

84 DEVELOPMENT AND IMPLEMENTATION OF THE COMPREHENSIVE SCHEME FOR EXPOSURE ASSESSMENT OF CHEMICALS IN INDUSTRIAL/ ACADEMIC RESEARCH FACILITIES

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10.1136/oemed-2018-ICOHabstracts.1045

Introduction It is often difficult to conduct exposure assessment of chemicals in research facilities of chemical industries or universities, because of the characteristics of laboratory tasks – variety of chemicals handled, relatively short task duration, and irregularity. The comprehensive scheme of exposure assessment for such laboratories was developed, where laboratory staff are engaged in the risk screening stage, and implemented in the large science/engineering university in Japan.

Methods The first part of the scheme is risk screening in respective laboratories. Laboratory staff identifies major chemical handling tasks in their laboratory rooms at first. They perform exposure assessment for each tasks in three ordered steps;

1. qualitative judgment,
2. 'revised control banding' (a qualitative risk assumption scheme developed by Japan Industrial Safety and Health Association and the University–A), and
3. detector tube measurements.

During this process, the staff finishes the assessment of a task when the identified risk is 'low', or they proceed to the next step or take risk mitigation measures when the identified risk is 'medium/high'. The result of this process is then collected and examined by a few occupational hygienists who oversee the whole research facility. The hygienists preform personal exposure assessments for tasks having residual risk, as the second part of the scheme.

Result This scheme was implemented in Tokyo Institute of Technology (with 14 000 faculties/staff and students) for about one year. Exposure screening was smoothly performed by ab. 220 laboratory groups for ab. 2100 chemical handling tasks. The numbers of conducted assessments in steps (1,2), and (3) were; 2100, 1300, and 170 respectively. Tasks with medium/high risk were effectively squeezed out throughout the process. The number of high-risk tasks finally identified was quite small.

Discussion It has been demonstrated that the developed scheme is very effective and practical for exposure assessment in chemical research facilities.