comprehensively explored. The criteria for inclusion and exclusion of articles were carefully selected, and they were analysed and evaluated according to the way in which they gave an answer to each of the questions posited.

This information was consolidated in a table in which each article was assessed according to the way it responded to each question. In this way, it was possible to draw conclusions and propose specific recommendations about every aspect related to the phenomenon studied.

As a conclusion, it is stated that occupational exposure to organic solvents, particularly the aromatic ones, has harmful effects in the auditory apparatus. Additionally, it was found such exposure enhances the auditory effect generated by noise in a synergic manner. This was particularly evident in the case of workers exposed to noise for more than 3 years, being particularly harmful high auditory frequencies (4 KHz a 8 KHz). Among the solvents which relate to such effect more strongly, it is possible to mention: Toluene, Styrene and Xylene (in this order).

1547 HEALTH SERVICES IN THE SOUTH AFRICAN MINING INDUSTRY

TM Balfour. *Chamber of Mines of South Africa*

10.1136/oemed-2018-ICOHabstracts.494

Introduction South African mining companies have historically provided health services to their employees. The standard managed care or capitation delivery method is not the only one available as employees are shifting to medical aid. South Africa has adopted the National Health Insurance (NHI) Policy and mine health facilities will be part of an NHI system. The Chamber of Mines conducts three yearly surveys of its members focusing on how health services are provided and such a survey was conducted in 2015.

Methods Primary data was collected during October 2015, using structured questionnaires sent to all Chamber members. Responses were then collated and analysed on Excel.

Results Thirty-three (33) mines, which make up 47.8% of Chamber members, representing 331 262 employees or 74% of the employees in the industry, responded to the survey. Overall, occupational Health Services were available to all (100%) contractors and permanent employees. Emergency Care Services were provided to all except 2.8% (2304) of contractors. Primary Health Care Services were available to 97.4% of permanent employees and 54.5% of contractors. Hospital in-patient Care was available to 90.7% of permanent employees and 38.3% of contractors. Sixty-one percent (61%) of employees were on medical aid. Overall, all mines provided TB screening and HIV counselling services.

Discussion Results showed that occupational and emergency services were well provided to all employees. Medical aid membership had increased over the years, with more employees going onto open medical aid schemes.

Conclusion There have been shifts in how health services are rendered by mining companies in South Africa. These shifts have to be taken into account when companies and the country are planning for delivery of future health services, particularly for the NHI.

161 THE 'CHANGE LABORATORY' AS A METHOD PROVIDING AN ELEMENTARY SCHOOL FORMATIVE INTERVENTION: A NEW PERSPECTIVE IN OCCUPATIONAL HEALTH

Ella Triumpho Avellar, Frida Marina Fischer*. *Department of Environmental Health, School of Public Health, Universidade de São Paulo, São Paulo, Brazil*

10.1136/oemed-2018-ICOHabstracts.495

Introduction A management team of a municipal secretary of education had a great concern about the great number of sick leave episodes of their teachers. Sessions aiming a school formative intervention showed the initial demand changed and turned to be the stress at work and its consequences which were perceived by the teachers.

Methods We used the 'Change Laboratory' (CL) method to evaluate work conditions, consequences and possible interventions. This method comprises of a set of tools for collaborative learning through experimentation at the workplace, carrying out changes in organisational practices. During 30 sessions, which took place once a week from 08/2015 to 09/2016, participated the elementary public-school teachers, the school management team, safety and occupational health technicians and representatives of human resources department. Individual interviews and meetings were also conducted with all participants.

Results Teachers created a new teaching work model with their daily activities in a comprehensive and collective way. They identified manifestations of tiredness and exhaustion like physical and mental fatigue ('waking up already feeling tired', voice disorders, lack of time and willingness to join social and leisure activities). Some of the causes of short term sickness absences were related to the needs to take care of personal and family life. The method allowed the safety service technicians to obtain detailed information of teachers' work activities and occupational health aspects.

Discussion The CL method provided to the teachers the opportunity to develop leadership and empowerment, such as the discussion of proposals to improve their daily work, relationships with students' families and with the management school team. Being closer to the reality of how work activities were performed by the teachers, the team of occupational health professional's experienced new ways of working to improve the organisation and workplace and eventually teachers' health. Financial support: FAPESP.

17 DATA OF OCCUPATIONAL-MEDICAL CHECK-UP EXAMINATIONS CHALLENGING THE CONCEPT OF ALLOSTATIC LOAD

¹A Esser, ¹T Kraus, ²H Minten, ²A Tautz, ¹J Lang. *¹Institute of Occupational and Social Medicine, Medical Faculty of RWTH Aachen University, Germany; ²Corporate Health Management – Germany, Deutsche Post DHL-Group, Bonn, Germany*

10.1136/oemed-2018-ICOHabstracts.496

Introduction The Allostatic Load Index (ALI) [McEwen 1993, 2001] assesses the physiological adaption to chronic stress by cumulative changes in the circulation, respiration, inflammation, metabolic and anthropometric system. The ALI thus can function as a risk marker for secondary prevention in occupational medicine. The aim of this study was to create an ALI

by using routine data from an executive check-up program of an international company and to examine the relationship between ALI and work-related surrogate health parameters.

Methods Datasets from 307 examinations of 151 executives (19♀, 132♂) were available. Each participant attended at least one check-up examination between 2003 and 2015. The mean of age was 43.6 (SD ±6.6, 31–64 y). We developed four different ALI. Thyreotropin was used as a proxy variable for a primary mediator [MacLean, 1994]. For each ALI the association to the Work Ability Index (WAI) and the category of sick leave days (SLD) was examined by using generalised linear mixed models. Zero inflation was considered for SLD. All analyses were conducted with R 3.3.3 or SPSS 23.

Results ALI 1 showed a significant negative association with the WAI (B=−0.680, SE=0.266, p=0.049). The results for ALI 2 had a similar trend (B=−0.355, SE=0.201, p=0.081). The higher the ALI the lower the workability was rated. After adjustment for zero inflation ALI 3 and 4 showed a positive association with SLD, that is, there is a significant difference between the category of no SLD and any SLD.

Conclusion This study led to first hints that biomarkers form a secondary prevention program are useful to calculate a meaningful ALI. This ALI could be used as a marker in workplace health promotion. Further studies with a longitudinal approach and a broader range of occupations are recommended.

186 EXPLORATION OF DIABETES & CARDIOVASCULAR RISKS FACTORS AMONG OIL SECTOR WORKERS IN KUWAIT: 2013 PME & COMPARISONS TO THE POPULATION

Mohammad Hasan. *Kuwait Oil Company, Ahmadi, Kuwait*

10.1136/oemed-2018-ICOHabstracts.497

Background High levels of diabetes and associated cardiovascular risk factors have been reported in Kuwait. While there is limited research on prevalence and risk factors in the general population, the associations of diabetes with cardiovascular (CVD) disease risk factors among oil industry employees have not yet been extensively explored. This aim of this study was to establish prevalence of diabetes and associations between diabetes and CVD risk factors broken down by gender and ethnicity.

Methods A cross-sectional study of 7000 employees of a major oil company (corresponding to 94% of the total population of employees) was conducted. 18.1% were female and 26.8% were non-Kuwaiti nationals. Clinical (blood samples) and non-clinical data (e.g. weight, height, and medically diagnosed chronic conditions) were gathered upon their visit to a clinic and medical laboratory.

Results Prevalence of obesity (using BMI) in the sample was 33.3%. 35.8% were physically active. The prevalence of diabetes was 15.6%, of dyslipidemia 47.9% and of hypertension 14.8%. Advancing age (≥40 years), male gender, obesity, physical activity, high triglycerides, hypertension and were significantly associated with increased risk of diabetes in a multivariate analysis. Ethnicity also played a role.

Conclusion This study shows that among the cardiovascular disease risk factors reported by oil sector employees in Kuwait, apart from age; hypertension is of particular importance as a predictor of diabetes, especially for women. Health behaviours (e.g. smoking and physical activity) did not show

expected or consistent multivariate associations with diabetes, across gender and nationality.

209 COLLECTION OF COUNTRY-WIDE AND CULTURE-SPECIFIC HM DATA TO IMPROVE EFFECTIVENESS OF HEALTH PROGRAMS

^{1,2}Chaitanya Gulvady. ¹Siemens Ltd, Mumbai, India; ²Indian Association of Occupational Health

10.1136/oemed-2018-ICOHabstracts.498

Introduction A comprehensive health program initiated in a corporate enabled the setting up/upgrading of health infrastructure, collection and analysis of data and launching of wellness programs in the workplace, to improve the physical and psychosocial health, the lifestyle and work life balance of employees.

Methods An elaborate Healthy@Siemens Label program was launched in 2015, which involved.

Management consent, Health Committees and As Is Analysis of health services. Measures were then planned to upgrade health infrastructure, improve collection and analysis of data and introduce interventional health measures. The following data collection was enabled.

- Sickness absenteeism
- Hospitalisation data
- Counselling data
- Body Biometrics
- Annual Health Checkups
- Morbidity Prevalence.

Result The data collected demonstrated the physical and psychosocial morbidity in employee population and health profile of employees. Measures such as the interventional Fit4Life program for Obesity, Diabetes, Blood pressure, HealthyLeadership@Siemens program for Managers, monthly Health promotion and awareness programs, vaccination drives for infective diseases, Introduction of a health portal and monthly reminders were the interventions that ensued.

Discussion Collection of comprehensive health data and introduction of interventional need based, sustained, targeted programs in workplaces leads to reduction in morbidity, in sickness absenteeism and improvement in body parameters of employees. There was early referral of employees with psychosocial issues by Managers for counselling. These measures have resulted in an improvement in the wellbeing of employees with resultant improved work life balance, increase in performance and productivity and increased ownership culture in the organisation.

235 INFLUENCING WORKERS' WILLINGNESS TO SEEK HELP AFTER A WORKERS' HEALTH SURVEILLANCE

Karen Nieuwenhuijsen*, Carel T Hulshof, Judith K Sluiter. *Academic Medical Center, Coronel Institute of Occupational Health, APH research institute, Amsterdam, NL*

10.1136/oemed-2018-ICOHabstracts.499

Introduction In Workers' Health Surveillance, workers are presented with their results of preventive tests. How the test results should be presented in this context in order to influence help-seeking behaviour, e.g. visiting a health provider, is