

be invited to participate. The data will be collected on a regular basis over a period of 5 months. Besides demographics, exposure measurements and health related data will be collected. First, a pilot will be kicked off in a limited sample of occupational physicians, testing the feasibility of the program. The final goal of the project is to register in a comprehensive but easy way the exposure to dangerous chemicals in order to improve preventive measures, to ensure workers' health and to develop a national surveillance policy.

## Oral Presentation

### Specific Occupations

#### 0265 RESPIRATOR FIT AND FACE SIZES OF SOUTH AFRICAN MEDICAL LABORATORY WORKERS: A FALSE SENSE OF PROTECTION

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**Introduction** Medical laboratory workers (MLWs) are exposed hazardous biological agents; some of which are airborne such as tuberculosis. Respirators despite being a recommended last resort are often the only means of control of exposure to tuberculosis.

**Aims** the study assessed the adequacy of respirator fit of MLWs and investigated determinants of fit.

**Methods** 562 medical laboratory workers using respirators underwent quantitative respirator fit testing using the Porta-count fit testing machine and their currently supplied respirator. Four facial characteristics were measured on these users by a trained occupational hygienist using callipers and a tape measure. The effect of the independent variables including face dimensions, ethnicity, smoking, respirator make and size, and age group was explored using multiple logistic regressions stratified by sex.

**Results** A large proportion (78%) of workers failed the fit test. Respirator fit was found to be significantly associated with face length (OR1.04, 95% CI 1.00–1.09), nasal root breadth (OR1.16, 95% CI 1.06–1.28), and respirator shape (cup) (OR0.56, 95% CI 0.39–0.78). Gender was found to be an effect modifier.

**Discussion** Fit testing and supply of different respirator sizes and types is necessary to protect MLW from airborne hazards. This is particularly important in high incidence tuberculosis settings. Affordable strategies for respirator fit testing and supply of appropriate sizes and types need to be identified for resource-constrained settings.

## Poster Presentation

### Intervention Studies

#### 0266 DESIGNING OF NEW LOW COST SIMULATOR FOR TRAINING ERGONOMIC LAPAROSCOPIC SKILLS

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Medical students can learn new knowledge and train technical skills by using simulations. Because the most of simulators are expensive the use of them is limited. The aim of this study is to design new low cost simulator for young veterinarians and surgeons. The simulator corpus has been designed based on the Solid Edge software and printed out with the 3D printer. For monitoring of the results we designed and programmed four exercises using the Arduino software. The monitoring of results is important for students to control the results. Needle suture, camera navigation, hand-hand coordination and tissue cutting are the main exercises for training of student skills. The purpose of simulation training also to increase the pace of skilled movements during simulation sessions, although the duration of every exercise is different. It is important to pay attention to ergonomics too in the designing process. The new simulator has mobile stand for different exercises to train technical skills in different ergonomic postures.

## Oral Presentation

### Ageing Workforce

#### 0267 SOCIOECONOMIC INEQUALITIES IN UNEMPLOYMENT AS A PREDICTOR OF DISABILITY RETIREMENT: A RETROSPECTIVE CASE-CONTROL STUDY

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**Background** Unemployment is known to be associated with poor health and disability. The aim of this study was to examine the risk of disability retirement by past unemployment in different socioeconomic groups.

**Method** Disability retirees aged 25–64 years were drawn from the years 2011–2015 (n=74,460) to trace back their unemployment histories during the 6 preceding years. Conditional logistic regression was used to compare the risk for disability retirement by pre-retirement unemployment (lasting 90+ days

per year) among the retirees and sex-age matched controls drawn from the non-retired population.

**Results** Unemployment increased during the six years preceding disability retirement but collapsed during the last pre-retirement year as the persons applying for pension moved on to disability benefits (i.e. sickness allowance). Unemployment increased also among the controls as the study population grew older during the follow up. However, there was no temporal trend in the level of pre-retirement unemployment among those who retired during the study years 2011–2015. Among manual workers, unemployment was more common than lower or upper non-manual employees or the self-employed in all years preceding disability retirement. However, unemployment was more common in the respective groups also among the matched controls. Among upper non-manual employees and the self-employed, unemployment more than doubled the risk of disability retirement whereas among manual workers and lower non-manual employees unemployment was only weakly related to disability retirement.

**Conclusions** Unemployment is most common among manual workers but among upper-non manual employees and self-employed who experience unemployment have an increased risk of disability retirement.

## Poster Presentation

### Other

#### 0268 SOCIO-ECONOMIC DIFFERENCES IN USE OF OCCUPATIONAL, PUBLIC AND PRIVATE HEALTH CARE IN WORKING-AGE POPULATION IN FINLAND

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**Introduction** Timely access to healthcare is crucial in order to tackle problems of work ability in the workforce. However, studies have shown that in many countries, e.g. in Finland, use of healthcare is unequally distributed across the socio-economic groups. Primary healthcare in Finland is organised at three different sectors (free occupational healthcare, costly private healthcare, and scarcely available public healthcare) that practically service different population segments. More knowledge is needed on use of healthcare at different sectors by socio-economic groups in order to advance more equal access to care.

**Data and methods** Register data on use of occupational, public and private healthcare during 2013 and on socio-demographic covariates were linked for the total working-age population (age 25–64) of the city of Oulu, Finland (n=105 000). Concurrent and exclusive use of healthcare at different sectors by socio-economic status was analysed with descriptive methods and multinomial logistic regression.

**Results** Use and non-use of healthcare at different sectors was strongly associated with socio-economic status. The majority

of the employed used some type of healthcare, and the users mostly utilised only occupational healthcare. Use of occupational healthcare also increased use of private healthcare. Those in disadvantaged socio-economic positions - also within the employees - were more likely to use only public healthcare or no care at all.

**Conclusion** Socio-economic position affects the availability and use of healthcare since different types of services, with varying costs and waiting times, are accessible to different groups. Access to healthcare of those in disadvantaged socio-economic positions should be improved.

## Poster Presentation

### Working Conditions

#### 0269 OCCUPATIONAL RISKS AND HEALTH PROBLEMS OF ANAESTHESIA TECHNICIANS AND DOCTORS IN OPERATING ROOM, A UNIVERSITY HOSPITAL STUDY

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Health effects caused by occupational risks are commonly ignored. We aimed to find out relation between working conditions and health problems. Cross-sectional study targeted anesthesiologists (114) working in Ege University Faculty of Medicine Hospital between 2016 October –2017 January. 81,5%(93) of anesthesiologists accepted to join this study. For data collection we use questionnaire (89 question) and periodical examination for 2016. Participants were divided into 41 anaesthesia technicians, 52 doctors according to their profession. The average age of the study group is 34. Anesthesiologists(63 person) have an average of 4 night shifts per month. Only 28% of employees use their annual leave regularly. 69.9% of the employees have used leave for 5 days or less annually. 61% of the employees are free overtime. The average time spent in daily operations is  $7.9 \pm 2$  hours. There were 16 ‘abortion x persons’ in the study group. There are 4 people who have infertility treatment. In the study group, there were 76.3% (71) presence of any disease, 66.7% (62) of work related disease, 45.2% (42) of work related psychiatric problem, 25.8% (24) of work related musculoskeletal problem expressed. Immature granulocyte levels were high in 29 (35.8%) workers. There are 81 people who have periodic hemogram examinations; %38,3 of them was anaemic. Haemoglobin values determined lower in women, in less than two hours a day sitting workers, those had high levels of exposure to chemical and psychosocial risks ( $p < 0,05$ ). Anesthesiologists face risks often. Annual periodic examinations are very important in terms of protection and improvement of employee health.