

## TASK FORCE 15: GLOBAL BURDEN OF DISEASE

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WHO has initiated the development of the methods for defining global burden of disease. The objective is to find gaps in information and knowledge and to develop further the methodology and improve the data collection so that it will better meet the information requirements for preventive actions. The method includes the assessment of exposures, evaluation of exposure-outcome association and calculation of the population attributable fraction (PAF). The effort recognizes the uncertainties in exposure assessment and wide variation in the outcome definitions and registration practices between the countries. The development work aims at better possibilities to prioritize activities and target selected measures in a cost-effective way.

### **WHO comparative risk analysis of the contribution of occupational risk factors to the global burden of disease**

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Keywords : global burden of disease, risk assessment, DALYs, attributable fraction

The objective of this projects was to estimate the contribution of selected occupational risk factors to the overall global burden of disease, using standard WHO methodology. The project has been completed. Comments were received from many CCs on the six comparative risk assessment analyses of occupational health risk factors. The Finnish Institute of Occupational Health, NIOSH, and the ILO were particularly helpful.

This effort by researchers at WHO/HQ and Collaborating Centres was published in summary in October 2002 in the WHO World Health Report. The full scientific papers will be contained in a WHO book in published in 2004 and have been submitted for publication in a peer-reviewed occupational health journal.

The global attributable fractions for mortality and morbidity due to selected occupational exposures are listed below:

Occupational Risk Factor    Attributable Fraction (%)

Low back pain	37
Hearing Loss	16
COPD	13
Asthma	11
Unintentional injuries	8
Lung cancer	9
Leukemia	2

Many important outcomes could not be included in the WHO study due to the absence of adequate global data, for example, infectious disease, coronary heart disease, reproductive disorders, intentional injuries, musculo-skeletal disorders of the upper extremities, and most cancers.

The WHO book was published in December 2004 and articles were submitted to the American Journal of Industrial Medicine for publication in 2005.

*Project start date:* January 2000

*Project end date:* December 2004

### **Preparation of guidelines for calculating the burden of occupational disease at the national level**

WHO/HQ

Documents are in preparation to illustrate how countries can calculate the national burden due to occupational lung diseases, carcinogens, injuries and hearing loss. These can be found on the WHO/OEH website [http://www.who.int/quantifying\\_ehimpacts/national/en/](http://www.who.int/quantifying_ehimpacts/national/en/)

The titles are:

- Sharps injuries: Global burden of disease from sharps injuries to health-care workers
- Occupational carcinogens: Assessing the environmental burden of disease at national and local levels
- Occupational airborne particulates: Assessing the environmental burden of disease at national and local levels
- Occupational noise: Assessing the burden of disease from work-related hearing impairment at national and local levels

Project start date: January 2002

*Project end date:* March 2004

## **International Surveillance of Seafarers' Health and Working Environment**

Olaf Jensen, Research Unit of Maritime Medicine, University of Southern Denmark (ocj@fmm.sdu.dk)

*Keywords:* seafarers, injury, exposures, survey, self-report

*Target groups:* seafarers, ship owners, their organisations, seamen's doctors, national maritime authorities, international organisations as IMO, ILO and ITF.

The purpose of the project was: 1) to describe the working, living and health conditions of seafarers and the injury incidences and related determinants in an international context 2) to raise awareness among seafarers, ship owners and their organisations about possible deficiencies in standards of occupational conditions. 3) To achieve equal international standards for safety, work and living conditions for all seafarers.

The project has been developed since 1998. It is a surveillance system by use of self-completed questionnaires filled out by the seafarers before or after the health examination (health examinations are mandatory for all seafarers) The anonymous questionnaires contain the same questions for all, translated to the seafarers' languages.

Pilot studies (1999-2000) in 5 countries showed that the method can work in practice. A questionnaire study was carried out in 2001 among 11 countries with 6.593 questionnaires in total. The theme part of this questionnaire round was safety on board: self-perceived safety, knowledge of safety representative, exposure to chemical substances, the use of safety equipment against chemical exposures and self-perceived health was examined. As permanent part of the questionnaire, injuries during the latest tour of duty were examined. The results have been analysed and published. The main part of the project was financed through support from The ITF Seafarers' Trust.

Other centres collaborating on the project are the Institute of Maritime and Tropical Medicine, Poland; Instituto Social de la Marine, Sociedad Española de Medicina Marítima Spain; Seafarers International Research Centre, Cardiff University; Ukrainian Research Institute of Maritime Medicine; Croatian Institute of Occupational Health, University of Rijeka; Semashko Seamen's Hospital, Arkhangelsk; Department of Occupational Health, Fudan University, Shanghai; Klinik Rajawali Lestari Condominium, Jakarta, Indonesia; Arguelles Medical Clinic Inc., Manila, Philippines, Drs. Stoner, Morton, Greeff & Rosendorff, Cape Town, South Africa.

The following products have been realized:

- Canals ML, Sala J, Jensen OC. Evaluación metodológica de cuestionarios internacionales autoadministrados a marinos mercantes en España. *Medicina Marítima* 2001; 2(3):153-159.

- Jensen OC, Laursen FV, Sorensen JFL, "International Surveillance of Seafarers' Health and Working Environment. A Pilot Study of the Method. Preliminary Report", *International Maritime Health*, 2001, Vol. 52, No. 1/4, p. 59-67.

Other contributors are Harry Caussy, SEARO (CAUSSYD@whosea.org); ILO and PAHO.

*Project start date:* January 1998

*Project end date:* October 2004

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## **Translation of the brochure 'Understanding and Performing Economic Assessment at the Company Level' into Bulgarian**

Emilia Ivanovich, National Centres of Hygiene, Medical Ecology and Nutrition, Bulgaria (e.ivanovich@nchmen.government.bg)

*Project start date:* January 2003

*Project end date :* December 2004

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## **National surveillance of the incidence of occupational diseases in the Czech Republic**

Pavel Urban, Center of Industrial Hygiene and Occupational Diseases, National Institute of Public Health, Prague, Czech Republic (pavel.urban@szu.cz)

*Keywords:* occupational diseases, incidence, burden of disease

*Target group:* experts, planners, managers, and decision-makers in occupational health, trade unions

The objective of the project is to gather in a standardized manner the information on the incidence of occupational diseases in the Czech Republic and to share the data with WHO/HQ and ILO for the purpose of the global burden of disease assessment.

The Czech National Registry of Occupational Diseases has been operating since 1991 as a comprehensive nationwide information system covering all cases of acknowledged occupational diseases. About 20 pieces of information are collected on each case, such as identification data of the patient, his or her age, gender, address, occupation, duration of exposure, diagnosis, item in the List of occupational diseases, information on the workplace where the exposure to an occupational hazard occurred, and others. The quality and completeness of the data stored in the Registry are continually checked by trained personnel.

As an output of the project, yearly reports are produced on the incidence and structure of occupational diseases and these are passed on to WHO/HQ and ILO. This project involves a long-term commitment.

*Project start date:* January 1991

*Project end date:* long term commitment

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## **Surveillance of incidence of occupational and work-related diseases in Serbia and Montenegro by samples**

Bogoljub Perunicic, Institute of Occupational and Radiological Health, Serbia and Montenegro (perunb@Eunet.yu)

*Keywords:* asbestos, exposure assessment, asbestosis, lung function, epidemiology

*Target group:* experts in Ministry of health and Ministri of labour and employment, occupational health experts, decision-makers

The purpose of the project is to study the rates and trends of occupational diseases and basic characteristics of work-related diseases in Serbia and Montenegro and to establish the registry of occupational and work-related diseases and injuries at national level.

Occupational and work-related diseases own enormous importance for economy in Serbia and Montenegro, and their prevention represents the great challenges for occupational health and safety services.

The national procedure of notification of occupational disease has been established by law, but diagnostic criteria are under strong influence of the individual practice. In the same time in Serbia and Montenegro there is no official list of work-related diseases, but there is list of obligatory reporting diseases of major socioeconomic importance, among them several work-related according WHO recommendation are included.

In Serbia and Montenegro there is no register for occupational diseases at national level. Due to important lacks in the official reporting their frequency, it is possible analyze only on the basis of registers from the Institute and three regional centers, or from specialized studies. As sources of work-related diseases data it is possible to use reports from obligatory periodical health examinations, several cross-sectional studies performed by occupational health services (mining, forestry, textile industry, agriculture), and social insurance organizations of disability.

The prevalence rates of main individual work-related diseases (arterial hypertension, ischemic heart disease, low-back pain, non-specific lung disease, and neurobehavioral disorders) according periodical health examinations were much lower than from cross-sectional studies (probably because of health work effects). There are great differences between prevalence in different branches of the economy, as well as between the male and female working force, and interregional issues play a role too. For example, in the five coal underground coal mines the prevalence rates of non-specific lung diseases were in the range 10.7% and 28.4%; the prevalence of hypertension from 8.7% to 19.6%; and of low-back pain from 9.25 to 20.6%. According to data from insurance organizations, work related-disease are on the first place as a cause of disability and early retirement. In the last five years they generate between 85 and 91% early retired people.

Expected products: National register of occupational diseases; national register of occupational injuries; the proposal for the national list of work-related diseases

Progress: Additional fund is needed! The project is scheduled to be completed by December 2004.

*Project start date:* May 1996

*Project end date:* continuing

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### **Evidence base for Regional occupational health action**

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*Keywords:* global burden, occupational burden, national profiles

*Target group:* Ministers of health, senior governmental officials

*Purpose of project:* The objective of this project is to develop Region-wide evidence base for occupational health action in Europe, and in particular:

- Estimate the occupational burden of disease for the European Region, and
- Stimulate countries to develop and update their national occupational health and safety profiles

Policy decisions and action are increasingly based on reliable evidence. The Global Burden of Disease (GBoD) Study carried out recently by WHO provides estimates about the effects of some of the most widespread occupational risk factors on the health of the population in the different regions of WHO. It is decided, therefore, to carry out a European study of the occupational burden of disease based on the wealth of information in the European region about occupational risks and their health effects. Such study would also analyse the detailed estimates of the GBoD. The European network of WHO collaborating centres on occupational health has developed national occupational health and safety profile in 22 countries, which also provide estimates about the magnitude of many occupational health risks.

The project activities include:

Analysis of the detailed estimates from the GBoD Study about the occupational burden of disease in the European Region;

1. Establishment of a consortium of collaborating centres and protocol for carrying out a European occupational burden of disease study;
2. Study of the European occupational burden of disease;
3. Publication of European report on the occupational burden of disease;
4. Providing assistance to the Member States for developing and updating their occupational health and safety profiles;
5. Publishing national occupational health and safety profiles

*Project start date:* February 2005

*Project end date:* December 2006

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### **National surveillance of incidence of occupational and work-related diseases by samples**

Dick Spreeuwers, Coronel Institute/Netherlands Centres of Occupational Diseases, The Netherlands (d.spreeuwers@amc.uva.nl)

Funding is in place, except for a study socio-economic consequences of occupational and work-related diseases.

The scheduled completion date is beginning of 2004.

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### **Piloting the guideline for calculating the burden of disease in Bulgaria**

Emilia Ivanovich, National Centres of Hygiene, Medical Ecology and Nutrition, Bulgaria (e.ivanovich@nchmen.government.bg)

*Keywords:* global burden, diseases, occupational diseases

*Target group:* decision-makers, planners and managers, occupational health staff in Departments of Health, Departments of Labour, and Trade Unions

The objective of this project is to raise awareness among decision-makers in Departments of Health, Departments of Labour, Trade Unions of the necessity of strengthening of Occupational health policy at all levels and investing in preventive measures and improving the working conditions. The aim is to find gaps in information and existing knowledge, to develop further the methodology and improve the data collection so that it will better meet the information requirements for preventive actions. The methodology has been adopted. The guidelines will be piloted by 2005.

*Project start date:* January 2005

*Project end date:* December 2006

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### **Pilot to evaluate the burden of occupational disease in some enterprises**

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*Keywords:* burden of disease, costs, cost benefit

*Target groups:* policy-makers, managers, occupational health staff, local authorities, employers, MOH, MOLISA

The objective of this project is to put the guideline of WHO/STC into practice to build the capacity for an occupational health network in Vietnam through a pilot research on the burden of occupational diseases; and to raise awareness among employers, managers, policy-makers, MIOH, MOLISA of the existing risks for workers, the magnitude of the problem and necessity of preventive measures. Fund has been secured by WHO.

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### **Assessing the burden of diseases and injuries and economic losses due to occupational factors in Vietnam**

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*Keywords:* burden of disease, injury, economic loss, occupational disease

*Target group:* decision-makers at Ministries, academic institutions, medical university, trade union, employers' organization, and employees' organization

The purpose is to develop simple analysis and calculation models of burden of diseases and injuries and economic losses due to occupational factors that can be used in workplaces.

The project is in place and funds have been secured by WHO, Vietnam Government.

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### **Global burden of disease, Design and Chilean profile**

Marisol Concha, Asociación Chilena de Seguridad (ACHS), Chile (gsamcb@gw.achs.cl)

Funds will be provided by the host country.

*Project start date:* July 2003

*Project end date:* December 2004

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### **Piloting the guideline**

Kirsti Tuominen (Kirsti.Tuominen@ttl.fi), Finnish Institute of Occupational Health, Finland

Funding is in place.

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### **Piloting the guideline for calculating the burden of disease in Bulgaria**

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Project start date: January 2005

Project end date : December2006