

ICOH'96 — 25th international congress on occupational health

The ICOH'96 congress was held in beautiful Stockholm on 14—20 September 1996. "For a good working life" was the motto of the congress, since today "good work" should not only be healthy and safe, but it should also promote personal and professional development. It was the 25th triennial congress of the International Commission on Occupational Health (ICOH), and it marked the 90-year anniversary of this organization. The congress attracted more than 3000 participants from 96 countries. His Majesty, King Carl XVI Gustaf of Sweden, opened the congress and honored the entire opening session with his presence. The scientific program consisted of 9 excellent keynote addresses, 52 mini-symposiums, 1500 other oral presentations, and over 1000 poster presentations. During the week, ICOH scientific committees also held their meetings. The organizers had succeeded in visualizing the guide to the scientific program in order to facilitate items of interest being found. The arrangements of the congress went smoothly, and the program proceeded promptly according to the schedule. In addition to a very interesting scientific program, the social program was also a success, culminating in a Nobel dinner in City Hall. Since it is impossible to squeeze all the presentations into a few pages, I will report only a few examples of the harvest of the congress.

Occupational health, a global perspective

In his keynote address "Occupational Health, a Global Perspective", Professor Jerry Jeyaratnam (Singapore) examined issues related to free trade agreements and their impact on occupational health. He pointed out that there are two aspects. It can be viewed as trade which exploits or benefits from the deficiencies in one or more of the trading partners. The potential areas of such exploitation and disadvantages of free trade agreements might be exploitation of cheap labor and inadequate control systems, inadequate information and technological know how, and poor occupational health services. On the other hand, free trade agreements could catalyze or accelerate the process of occupational health development in the disadvantaged trading countries. The potential benefits might be economic growth and healthier workers, development of occupational health services, transfer of technological know how, training and education of occupational health professionals, and the development of occupational health legislation. Professor Jeyaratnam emphasized that we in occupational health should limit our-

selves to the concerns of the provision of a safe workplace and not get embroiled in social justice. It would be best for us in occupational health to strive for the global harmonization of standards for occupational health services among trading partners — not at the lowest common denominator but at the highest.

Gender and work

Professor Joan Acker (United States) drew attention to a difficult question "Gender and Work: Does Difference Make a Difference?" in her keynote address. Images of masculinity and femininity influence how people think about work. Gender segregation of jobs and work organizations, gender typing of work, wage differences between men and women, and the assignment of most household labor to women are prevalent ways that work is organized on gender principles. What are the implications of this for occupational health professionals? Professor Acker called attention to the fact that we sometimes, without intent, make some of the assumptions that cast men as "real" workers and women as "peripheral". As a result, work injuries and illnesses of men may seem more real and urgent than those of women. Moreover, repetitive stress injuries, so common for women, may be difficult to document simply because women are the injured workers, and it is easy to see that their complaints result from psychosocial factors and thus are not as legitimate as injuries that are clearly demonstrable, as, for example, a lost foot. Another implication is that, although both women and men experience stress at work, women appear to have more complex sources of stress in their lives because they are responsible for home and family, as well as for their paid jobs. Because some sources of stress are outside women's paid work situation, they may be easy to ignore, even though they interact with stressful factors at work. Single mothers who have low pay may be the most at risk in such situations. Finally, Professor Acker emphasized that a work environment made hostile by sexual harassment or the systematic denigration of women may be difficult to identify as containing health hazards, partly because men in positions of power do not see, or prefer not to see, such conditions as hazardous. Some cultural images of gender, sexuality, and work are so taken for granted that to dislodge them may take a major change in cultural consciousness for some occupational health professionals, as well as everyone else in the workplace.

Occupational health services in transition

In the mini-symposium "Occupational Health Services in Transition — Challenges to Professionalism and Ethics" Dr H Nico Plomp (The Netherlands) presented adequate strategies for occupational health professions in market-dependent circumstances. He pointed out that occupational health professionals should be organized as a market party, independent of the financiers, customers and management of occupational health services. The internal aim of this type of organization of occupational health professionals is the development and maintenance of standards of good practice, training, and quality assurance. Externally, this organization should be equipped to participate in the negotiation on the infrastructure for occupational health, on contracts for services, and on procedures for quality assurance.

On behalf of academician Yuri Kundiev, Professor Kirichenko (Ukraine) gave an overview of the current situation in Eastern European countries and the perspectives of occupational health services. Despite differences between Eastern European countries, these countries are undergoing economic and social crises resulting in the worsening of workers' health. Instability of life and work conditions and uncertainties in relation to their future cause psychoemotional stress, which, nowadays, is the most prevailing hazard of the psychological state, life, and health of people. In recent times the legislation on occupational health and safety has been improved in several countries. New legislation has declared the humane principles of the priority for workers' life and health, full responsibility of an owner for safety and favorable work conditions, and social protection of workers. However, many items of national legislation, as well as recommendations of international organizations, are not being carried out in full measure. The most important task in this respect is the harmonization of national legislation and the legislation of the European Community. Another task is to preserve the scientific potential of well-known scientific institutes for occupational safety and health in Eastern Europe.

Dr Deogratias K Sekimpi (Uganda) gave an overview of the situation of occupational health services in Africa using Uganda as an example. The capacity of occupational health services is low in Africa in terms of personnel, institutions and legislation. Uganda has 17 million inhabitants, 1 physician for 17 000 inhabitants, and altogether 5 qualified occupational physicians in the entire country. There are 50 physicians, 150 nurses, and 100 other professionals waiting for training, but the problem is finances. One solution would be for multinational companies and international organizations operating in Africa, as well as African governments themselves, to promote occupational health training and facilitate the implementation of occupational health principles universal-

ly. The backwardness of occupational health training and the paucity of occupational health manpower in Africa should be considered an international challenge for occupational health professionals all over the world, rather than a lamentation for the few occupational professionals in Africa, Dr Sekempi concluded.

Another view of the situation in Africa was given by Jonny Myers (South Africa). Occupational health services in South Africa are characterized by low competence, substantial coverage gaps, few promotive and preventive services, and conflicting customer needs. Profit-oriented enterprises place organizational limitations on nontangible (preventive) occupational health services. Challenges to professionalism arise from the proposed multidisciplinary practices at the primary level in the national health system. Organizational culture changes will be necessary to deliver caring and independent services, also to facilitate the continual evaluation of occupational health practices.

Quality assurance in occupational health services

In the mini-symposium "Quality Assurance in Occupational Health Services" Mr Stuart Whitaker (United Kingdom) gave an overview of the development of quality and audit in occupational health care in the United Kingdom. Participation in Medical Audit — systematic critical analysis of the quality of care — is now a requirement for all doctors practicing in this country. This requirement has added a new impetus to the development of audit and evaluation in all aspects of medical care and also helped to draw together diverse efforts to encourage other health care professionals towards evaluating their standards of practice. The Royal colleges have supported this development and have stated that audit should be seen as an essential component of modern professional practice. In occupational health this system has led to the development of regional audit groups consisting of doctors, nurses, and other members of occupational health teams participating in Clinical Audit — a multidisciplinary approach to evaluating practice by identifying and comparing standards of practice with performance. The development of quality and audit is seen as essential for the delivery of high-quality occupational health services which closely match the needs of their clients. Evidence-based practice is increasingly being sought by purchasers, recipients, and providers of occupational health care.

Professor Kaj Husman (Finland) presented the new legislation and two decrees of the Council of State concerning occupational health services in Finland. They included some principles referring to quality assurance or quality systems. The following aspects refer to quality in the legislation: good occupational health practice, continuing follow-up of quality and effectiveness in the oc-

occupational health service units, a new national follow-up system for occupational health services, and development of occupational health services through extensive field experiments in 1995–1997.

Anton F Casparie (The Netherlands) pointed out that, as a first step in quality management, the purposes of occupational health services and the type of services that are provided have to be defined carefully (preemployment medical examinations, periodic general screening, sickness/absenteeism consultations, workplace inspection, health education, and first aid). Quality management for occupational health services can be set up from the professional perspective (physician, nurse) and from the perspective of the institution (the occupational health department). From the professional perspective the frame of reference is external, within the professional society, and maintaining clinical autonomy plays an important role. A comparison is to be made with quality management activities of professional societies in The Netherlands: guideline development, peer review, visitation and recertification. From the perspective of the institution the principles of total quality management have to be applied (multidisciplinarity, integrated and client-oriented approach, management responsibility) that can be the subject of independent certification. In addition, besides applying its own quality system, occupational health services can make an important contribution to the three care systems of the company: the quality, the environment and the work conditions.

Work conditions and cardiovascular diseases

Professor Johannes Siegrist (Germany) gave an excellent presentation in his keynote address "Working Conditions and Cardiovascular Diseases". He reviewed the public health problem cardiovascular diseases are causing in advanced and, increasingly also, economically developing societies. The contribution of traditional occupational hazards to cardiovascular diseases was briefly discussed. Automatization, new information technologies, expansion of jobs in the service sector, globalization of the labor market in combination with forced retirement, and structural unemployment are new challenges of occupational life that affect human health. Theoretical models are needed which conceptualize this person-environment transaction. He presented a view of the mechanism through which work stress enhances cardiovascular diseases. Stress can affect through neurohumoral activation lipid metabolism, blood pressure and the level of fibrinogen. On the other hand, stress can also increase cardiovascular risk factors that are related to life-style. Professor Siegrist discussed two theoretical models "demand-control", or the "job strain model", and the "effort-reward imbalance model" and their empirical supports.

Environmental stress and immunity

In the mini-symposium "Environmental Stress and Immunity" three studies [Sheldon Cohen et al (United States), Arthur Stone et al (United States) and Takeshi Tanigawa et al (Japan)] showed that job stress can weaken immunity, whereas, for example, social support and high job control affects positively. Work events may, therefore, contribute to susceptibility to some infectious diseases, especially upper respiratory illnesses. However, the behavioral and biological pathways that tie these psychosocial factors to host resistance to disease need to be studied further.

Sleepiness, safety and work

In the mini-symposium "Sleepiness, Safety and Work" Dr David Dinges (United States) pointed out that sleepiness and fatigue have been primary causal factors for many catastrophes (eg, Exxon Valdez, Three Mile Island). These incidents have occurred often between 0100 and 0500. The other peaks of sleepiness have been identified to be between 1200 and 1400 and 2000 and 2200. In the world of congested highways, nuclear power plants, jumbo jets, super tankers, environmentally hazardous materials, and 24-hour operations, there is compelling evidence of the need to identify and, when possible, prevent the performance-impairing effects of fatigue and its contribution to accidents. Since many people work in transportation, traffic accidents should be considered more seriously. According to Dinges, fatigue has been the cause of 41% of truck accidents and is the primary cause in 31% of the fatal accidents of truck drivers.

Professor Torbjörn Åkerstedt (Sweden) stated that traffic accidents during the night are 8 times more frequent than those during the day. This risk increases even more (2–3 times) if the driver is in early adulthood. According to Professor Åkerstedt and Kazuka Kogin et al (Japan) only sleep that has lasted at least 15 to 30 min is recognized by the sleeper.

Simon Folkard (United Kingdom) described the risk for accidents according to the length of workhours. Relative to the mean for the first 8 hours, the risk was approximately doubled after 12 hours at work and tripled after 14. However, the risk clearly deviated from this exponential function during the second and fourth hour, a finding implying that short duty spells may also be associated with an increased risk of accidents.

Reproductive hazards

Interest in male reproductive hazards has increased lately, and the result was seen in many oral and poster presentations. Many presentations emphasized that fertility is characteristic to a couple, and therefore it is

important to consider exposures of both women and men. The new method ultramorphological analysis of sperm quality was used to study workers exposed to ionizing radiation from decontamination after the Chernobyl nuclear reactor accident. Alf Fischbein (Israel), with his colleagues from both Israel and the Ukraine, found that the radiation-exposed population of workers had reduced sperm motility and ultramorphological defects in the sperm nucleus 7 years after radiation exposure. The injury was more severe in young workers.

Effects of lead on semen quality and fertility were reported in many presentations. Results confirm previous findings that lead exposure at a blood lead concentration of 40 µg/dl (approximately 2.0 µmol/l) may be the biological threshold that can give rise to a main change in semen quality [ie, Guogan Xu et al (Republic of China)]. On the other hand, the same level of lead in blood was apparently not associated with a reduced birth rate [Jens Peter Bonde et al (Denmark)].

Markku Sallmen et al (Finland) had investigated time to pregnancy and paternal exposure to organic solvents. The results supported to some extent the assumption that daily or strong paternal exposure to organic solvents is associated with decreased fecundability.

Many interesting findings were presented concerning female reproductive hazards. The results of the study by Petter Kristensen et al (Norway) supported the hypothesis that exposure to mycotoxins in grain farming may cause delivery in midpregnancy. A plausible mechanism is toxic induction of labor. Although similar effects are known for the ingestion of infected food and feed, inhalation exposure to mycotoxins with adverse reproductive effects has not been reported earlier.

Marja-Liisa Lindbohm et al (Finland) had studied whether shift work or quantitative work load were related to spontaneous abortions among office workers. The results indicated no association between shift work, overtime or high work pace and spontaneous abortion among office workers. There was, however, a suggestion of an effect from a continuously high work quantity.

Lena Hillert et al (Sweden) had studied spontaneous abortions among women working with children younger than 7 years of age. The results support the hypothesis of a positive association between spontaneous abortions and contact with children, both occupational and at home. The precise cause is still unknown, but infections might be a contributing factor.

Chemicals and allergies

In the mini-symposium "Chemicals and Allergies — An Update" Dr Jörn Nielsen (Sweden) gave a presentation

on respiratory disease in association with exposure to organic acid anhydrides. In his study work-related symptoms of the eyes and upper and lower airways were very frequently found in industries handling phthalic anhydride (PA), methyltetrahydrophthalic anhydride (MTHPA), and hexahydrophthalic anhydride (HHPA) at low exposure levels (upper airways for up to 65% and lower airways for up to 18% of the exposed workers). With an exposure time of about 1 year to MTHPA the nasal symptoms were mostly but not always reversible. Smokers and atopic subjects showed no greater risk in developing symptoms. In PA exposure only a few subjects developed specific immunoglobulin E (IgE) antibodies, whereas the development of specific IgE antibodies occurred frequently in MTHPA and HHPA exposure. The challenge tests showed that the symptoms associated with exposure to organic acid anhydrides are mediated by a type I hypersensitivity reaction in subjects having specific IgE antibodies. In other cases the mechanism remains to be clarified. A preemployment medical examination including spirometry and regular examinations of exposed workers were recommended, as is exposure monitoring.

In the same session Henrik Nordman (Finland) gave an overview of diisocyanates as a cause of occupational asthma. In many European countries and in the United States isocyanates have become the most common cause of occupational asthma, accounting for 19–25% of all reported cases. Asthma has developed in a majority of cases within the first year of exposure. The average exposure of sensitized subjects to toluene diisocyanate has been as low as 0.002 ppm. Spills or other peak exposures are probably crucial, however, to the sensitization process. Sensitized workers can react to concentrations as low as 0.001 ppm. Isocyanate asthma does not necessarily disappear after the cessation of exposure. Most follow-up studies indicate that at least 50% still have symptoms after 1 year without exposure. From the prognostic point of view the most effective single measure is immediate discontinuance of exposure after the onset of symptoms.

This was only a short glimpse of the ICOH'96. Many, many more interesting presentations were given during the week. The next ICOH congress will be held in Singapore in the beginning of September in 2000, and the following in Sao Paulo in 2003.

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