

Final Report

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Renewing a Century of Commitment to a Healthy, Safe, and Productive Working Life ` Date of

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Abstract

The meeting, 28th International Congress on Occupational Health: Renewing a Century of Commitment to a Healthy, Safe, and Productive Working Life, was held in Milan, Italy June 11-16, 2006. This Congress is the triennial meeting of the International Commission on Occupational Health, the only international body of scholars and practitioners in the field. Worldwide workplace fatalities, injuries, and illnesses remain at unacceptably high levels and involve enormous and unnecessary health burden, suffering, and substantial economic loss. The World Health Organization and International Labour Organization estimate two million work-related deaths worldwide and the trend seems to be rising. In addition, each year there are some 268 million non-fatal workplace accidents in which the victims miss at least three days of work as a result, as well as 160 million new cases of work-related illness. The most common workplace illnesses are cancers from exposure to hazardous substances, musculoskeletal diseases, respiratory diseases, hearing loss, circulatory diseases, and communicable diseases caused by exposure to pathogens. In many industrialized countries, where the number of deaths from work-related accidents has been falling, deaths from occupational disease, notably asbestosis, continues to be on the rise. An average of 16 American workers die each day from injuries on the job (in 2000, there were 5915 fatal work injuries). Even the most conservative estimates find that about 137 additional workers die each day from workplace diseases.

The specific aims of the proposal:

1. Provide an opportunity for the international gathering of occupational safety and health scientists and practitioners for education and training in occupational health and safety.
2. Share knowledge about current and emerging issues related to safety and health at work, advances in the science in occupational safety and health and the translation of research to practice, and best practices in occupational health and safety.
3. Support opportunities for occupational safety and health professionals from underserved and underrepresented areas to acquire knowledge and information about the science, education and training, and practical aspects concerned with health and safety at work.

A wide range of topics will be covered including those reflective of the NORA. These are listed in the proposal.

Final Report

28th International Congress on Occupational Health: Renewing a Century of Commitment to a Healthy, Safe, and Productive Working Life
June 11-16, 2006
Milan, Italy

Section 1

Highlights

The highlights of the project:

1. The Congress was attended by more than 3,000 delegates from 93 countries with nearly 2,000 research papers/posters, plenary sessions, and keynote addresses provided.
2. A variety of scientific topics in 60 areas was provided, resulting in 700 peer-reviewed oral scientific papers selected and 800 poster sessions.
3. 31 Congress attendees from 25 countries were awarded NIOSH supported scholarships to attend the meeting.

Translation/Relevance/Outcomes

As this was a scientific meeting, research outcomes are not the intent. However, this conference support is consistent with the mission of the NIOSH Global Collaborations Program to contribute to the reduction of occupational diseases, injuries, and fatalities among all workers' employed globally through cultivating international partnerships and sharing pertinent information.

As stated in the mission and consistent with NIOSH Goal #3, this is done through:

- High quality research with international partners to lead to reduction of occupational illness/injury among all workers.
- Best practices arrived at through practical solutions based on evidence.
- Partnerships with international organizations for achieving successful outcomes.
- Translating research to good practices and products through international research, technical assistance, capacity building, and information sharing.

Through the 1,800 presentations, Congress participants can take information acquired and learned and apply it in their home countries to reduce the work-related illness and injury burden, improve practice, and work to change policy and legislation to make potential changes happen.

Traditionally occupational health research tends to lag behind the developments of work life. Challenges set by new technologies and new developments in the globalizing world of work are enormous. We need to create opportunities to link research and practice in order to provide a better response to the demands of work life for development of safe and healthy working conditions. In developing countries and several sectors of economies in the industrialized and transitory countries, traditional health and safety hazards still dominate; however, new hazards and challenges are also emerging. Risks related to nanotechnologies, new biological hazards including global pandemics, and new social hazards, for example, new types of employment and growing mobility of working population, present new challenges that need to be actively and proactively researched, then findings shared. Increased competence of occupational health and research experts is also needed to support multidisciplinary and multi-professional collaboration and for collaboration with all the relevant stakeholders, including an examination of the impact on the content of training curricula for all expert categories active in occupational health. Better utilization of available knowledge can be facilitated by more active advocacy, and information and awareness-raising by the occupational health and safety training and research communities to improve best practices and services. Collaboration with the key groups active in occupational health research, policy, and practice is needed to strengthen involvement at local, national, institutional, regional and global levels. The ICOH Congresses provide an excellent forum for information sharing and interactive networking as evidenced by this active participation of delegates.

The International Commission on Occupational Health (ICOH) is an international non-governmental professional society whose aims are to foster the scientific progress, knowledge, and development of occupational health and safety in all its aspects. It was founded in 1906 in Milan as the Permanent Commission on Occupational Health. Today, ICOH is the world's leading international scientific society in the field of occupational health and safety with a membership of 2,000 professionals from 93 countries. The ICON is recognized by the United Nations as a non-governmental organization (NGO) and has close working relationships with ILO and WHO.

The most visible activities of ICOH are the triennial World Congresses on Occupational Health, which are usually attended by some 2,000 to 3,000 participants. The 1993 Congress was held in Nice (France), the 1996 Congress in Stockholm (Sweden), the 2000 Congress in Singapore and the 2003 Congress in Iguassu Falls (Brazil). The 2006 Centennial Congress held in Milan, Italy had over 3,200 participants. ICON has 35 Scientific Committees, which have regular symposia, produce scientific monographs, and help review the abstracts submitted to the International Congresses.

Section 2

Background and Significance

The 1906 "Universal Exhibition" — the world's fair celebrating the achievements of human ingenuity in science, technology and arts - was organized in Milan, Italy. That exhibition was marked by a special event: the official opening of the Simplon tunnel linking Milan to Switzerland and France, an astonishing success of the work of man, which however took a heavy toll in terms of number of deaths, injuries and diseases among the workers. A group of physicians and scientists, concerned with these consequences,

decided to convene an international meeting on occupational health and safety devoted to three main issues: work-related physiology, pathology and hygiene; prevention of work-related diseases; and social assistance. 300 delegates attended the Congress which was closed on 13 June 1906 with the creation of the International Permanent Commission on Occupational Health, currently known as the International Commission on Occupational Health, ICOH. The aim of the Commission was to promote research on occupational diseases worldwide and disseminate the available knowledge to the entire scientific community, to physicians, employers and workers. To achieve these goals it was further decided to regularly hold a congress every three years. In 2006, a century after its foundation, the ICOH organized and held organizing, on the very same dates (11-16. June), its 28th International Congress back in its birthplace, Milan, Italy.

During these 100 years, significant improvements in working conditions have been achieved, and certainly occupational health professionals have contributed thereto. At present however, the occupational health community continues to tackle new problems:

- Changes in the world economy, the process of globalization, new technologies, different types of employment and work contracts constantly affect health and safety at work.
- Small and medium-sized enterprises and the self employed do not often have the necessary financial and technical resources to adequately assess risks and ensure appropriate protection.
- Developing countries and countries in transition lack access to those services that would be required to assess and control occupational hazards.

Worldwide workplace fatalities, injuries, and illnesses remain at unacceptably high levels and involve enormous and unnecessary health burden, suffering, and substantial economic loss. According to the latest International Labour Organization (ILO) estimates (2005), there are almost two million work-related deaths worldwide and the trend seems to be rising. In its latest estimates, the ILO found that in addition to job-related deaths, each year there are some 268 million non-fatal workplace accidents in which the victims miss at least 3 days of work as a result, as well as 160 million new cases of work-related illness. The ILO has previously estimated that workplace accidents and illness are responsible for the loss of some 4% of the world's GDP in compensation and absence from work.

Broken down by region, the figures indicate that workplace accidents have leveled off in many industrialized and newly-industrialized countries, while some countries now undergoing rapid development in Asia and Latin America are experiencing increases. For example, the ILO analysis showed that while the number of fatal and non-fatal workplace accidents held steady or declined in most regions, in China the estimated number of fatal accidents rose from 73,500 in 1998 to 90,500 in 2001, while accidents causing three or more days absence from work increased from 56 million to 69 million. Meanwhile, in Latin America, a rise in the total number of persons employed and growth in the construction sector, particularly in Brazil and Mexico, appear to have led to an annual increase in fatal accidents from 29,500 to 39,500 over the same time period.

The most common workplace illnesses are cancers from exposure to hazardous substances, musculoskeletal diseases, respiratory diseases, hearing loss, circulatory diseases and communicable diseases caused by exposure to pathogens. In many industrialized countries, where the number of deaths from work-related accidents has been falling, deaths from occupational disease, notably asbestosis, continues to rise. Globally, asbestos alone is responsible for 100,000 occupational deaths per year. Meanwhile, in the agricultural sector, which employs half the world's workforce and is predominant in most underdeveloped countries, the use of pesticides causes some 70,000 poisoning deaths each year, and at least seven million cases of acute and long-term non-fatal illnesses (WHO, 2005c).

The workplace environment profoundly affects health; simply by going to work each day, we may face hazards that threaten our health and safety. Risking one's life or health should never be considered merely part of the job. In the United States, workers are working more hours than ever before. Workplace hazards continue to inflict a tremendous toll in both human and economic costs. An average of 16 American workers die each day from injuries on the job (in 2000, there were 5915 fatal work injuries). Moreover, even the most conservative estimates find that about 137 additional workers die each day from workplace diseases. These occupational injuries and diseases create needless human suffering, a tremendous burden upon health care resources, and an enormous drain on U.S. productivity (NIOSH, 2004).

The ILO and the World Health Organization (WHO, 2007) estimates that there are fewer than 20% of workers who have access to a basic standard of occupational health services. The right to health and safety at work is a part of basic human rights. Most of the world's population (58%) spend one-third of their adult life at work contributing actively to the development and well-being of themselves, their families, and of society. Work may have both a positive and an adverse effect on the health of the worker. In the most favorable circumstances work provides the income and material outputs for meeting the necessities of life and also has a positive impact on social, psychological, and physical health and well-being. At the same time, a high level of occupational health and safety contributes to the achievement of material and economic objectives and provides high quality and performance in working life. In spite of this, conditions at work and in the work environment for many occupations and in many countries still involve a distinct and even severe hazard to health that reduces the well-being, working capacity, and even the life span of working individuals (WHO, 2005a).

The officially registered working population constitutes 60-70% of the adult male and 30-60% of the adult female population of the world. When work at home and informal work are taken into consideration the percentage is even higher. In unfavorable cases the levels and intensities of hazardous exposures may be 10 or even 1000 times greater at work than elsewhere. Workers in the highest risk industries such as mining, forestry, construction and agriculture are often at an unreasonably high risk and one-fifth to one-third may suffer occupational injury or disease annually, leading in extreme cases to high prevalence of work disability and even to premature death. Less dramatic but well defined occupational health problems also prevail in service and office occupations where psychological stressors and ergonomic problems often increase the workload, cause job dissatisfaction, and affect health and productivity (WHO, 2005b).

Against this background, the 2006 Centennial Congress the ICOH coined the motto "Renewing a century of commitment to a healthy, safe, and productive working life", thereby emphasizing its dedication to responding to the new century's challenges through the use of evidence-based science and best practices to eliminate unnecessary, preventable occupational diseases and injuries, promote the development of work ability, and improve productivity. The influence of the Congress remains unmatched as this is the only international body that holds a regular meeting for occupational health professionals emphasizing collaboration, education and training, and advancing the science in occupational health and safety in many disciplines. Colleagues from many different countries created a scientific and social program to meet the needs and the expectations of occupational safety and health scientists and professionals all over the world and specific aims of this project. Topics covered were reflective of the NORA priorities and supported the mission of NIOSH.

Specific Aims

1. Provide an opportunity for the International gathering of occupational safety and health scientists and practitioners for education and training in occupational health and safety. Several committees were established to plan and implement the Congress including the Centennial Committees (5 members); International Scientific Advisory Committee (29 members representing 19 countries); and the National Scientific Advisory Committee (12 members). More than 3,200 participants attended the Congress representing more than 93 countries. Registration for the Congress permitted participants to attend keynote sessions, and sessions by topic of interest, business meetings, poster sessions, and social events. There were 1,800 research communications delivered of which 700 were oral (abstract) sessions and 800 poster sessions. The remainder were from dedicated symposia sessions. Business meetings were held for 33 Scientific Committees which were well attended by Congress delegates to discuss scientific and policy issues and network related the work of the Scientific Committees. Share knowledge about current and emerging Issues related to safety and health at work, advances in the science in occupational safety and health and the translation of research to practice, and best practices In occupational health and safety. There were 60 Special Session topic areas for which abstracts were submitted for the Congress (Table 1). Topic areas all related to the National Occupational Research Agenda (NORA). Abstracts were reviewed by members of the International Scientific Advisory Committee group, and selected for oral (n=700) or poster (n=800) presentation. Eighteen keynote lectures were provided (Table 2).

T a b l e 1
Suecial Sessions TODics

1.	Trends and priorities in occupational health and safety: The role of the national institutes
2.	- The new global strategy for occupational health and safety and the program of the network of collaborating centers in occupational health
3.	- E research on occupational health worldwide
4.	- The common ILO-WHO project on revision of the list of occupational diseases
5.	- Organic dusts symposium: Current opinion
6.	- Bread, work and health
7.	- Disability and work
8.	- Dioxin effects on human health: Seveso 30 years after
9.	- Neurosensory data to be used in risk assessment
10.	- New statistical approach for the evaluation of neurobehavioral data
11.	approaches N c h e s in the diagnosis of solvent-related toxic encephalopathy
12.	- Chronic neurodegenerative disorders and occupational exposures
13.	Analytical A l and biological variability: Impact on interpretation of biomonitoring results
14.	- Biomarkers of metal toxicity in risk assessment
15.	- Influence of nutritional factors in metal toxicology
16.	- Ethical aspects of biological monitoring and risk assessment in industrial vs. developing countries
17.	- Occupational health care for the underserved. How best to reach small enterprises and the self-employed
18.	- Ethical aspects in epidemiology and in research involving human subjects
19.	- Occupational medicine in court
20.	- Health problems in the automotive industry
21.	- Best practices in the construction industry
22.	- Aging and work ability in the construction industry
23.	- Competencies in occupational health
24.	- Evidence-based medicine for occupational health
25.	- Cochrane occupational health field
26.	- Continuing education in occupational health
27.	- Does it make a difference? Case studies in good occupational safety and health communication practice. Lessons learned
28.	- What makes a difference? Case studies in good communication practice. Lessons learned in occupational safety and health: Knowledge management and web-based delivery
29.	- Collaboration between occupational physicians, general practitioners, and occupational health and safety models
30.	- Work-relatedness of health problems: A blind spot in curative care?
31.	- Risk of hearing loss from noise and chemicals
32.	- The manifold faces of violence at work
33.	- Basic occupational health
34.	- Nurses' early exit study
35.	- Physical work load in patient handling
36.	- Psychosocial work load in health care workers
37.	- Occupational health of health care workers in countries in transition
38.	- Occupational health and the role of the nurse
39.	- International standards and harmonization of European Union, ILO, and WHO with national legislation in countries in political and economic transition
40.	- Risk assessment in occupational safety and health
41.	- Historical evolution of the concept of risk
42.	- Prevention of accidents and trauma
43.	- Use of human data in risk assessment
44.	- Epidemiology of musculoskeletal disorders
45.	- Prevention of musculoskeletal disorders in problematic sectors
46.	- Stress and musculoskeletal disorders
47.	- Mad in the health care sector
48.	- Workplace intervention studies for the prevention of musculoskeletal disorders and disability
49.	- Strategy and experiences of musculoskeletal disorders prevention in large manufacturing companies
50.	- Health effects of fibers and particulate matters

51.	- Occupational asthma: Causes, mechanisms, occurrence and prevention
52.	-Occupational health systems, policy <u>and services for southeast</u> European countries
53.	- Occupational ^{health care} in times of llobalization– routes towards better safety and health for all
54.	- New challenges to occupational safety and health: Bridging economic and social development
55.	-The state of occupational health worldwide
56.	- Indicators and profiles for monitoring occupational safety and health
57.	-Interplay of occupational, nonoccu ational and genetic factors in cancer causation
58.	- Current status of reference material for pneumoconlosis
59.	-Tobacco-free workplaces
60.	- Future occupational health issues in developing countries

T a b l e 2
Keynote Lecturers

Country	Gender	Author	Title
USA	M	H Checkoway (USA)	Balancing future resources for epidemiologic research on old and newly emerging occupational hazards
	M	B Terracini (IT)	Epidemiology of asbestos-induced diseases in developing countries
GB	M	C Cooper (UK)	The changing nature of the work: The future stressors and what we can do
USA	F	K Kreiss (USA)	Emerging opportunities to prevent occupational lung disease
SGP	M	OP Lim (SG)	Lessons from SAPS in an age of emerging infections
I	F	Cristina Mapp (IT)	The increasing occurrence of occupational asthma and its determinants
GB	M	I Nicholson (UK)	The potential of NMR-based metabolomics to identify new biological indicators in the environmental health field
USA	F	L Punnett (USA)	Musculoskeletal disorders at work and gender
GB	I M	R Tennant (UK)	Toxicogenomics and environmental diseases: The search of biomarkers predictive of adverse effects
SA	F	K Voy (SA)	Is globalization outpacing ethics and social responsibility in Occupational Health?
USA	F	G Sorensen (USA)	Integrating Occupational Health and Safety and Worksite Health Promotion: Opportunities for Research and Practice
	M	P Ichino (IT)	The new structure of juridical responsibility for the workers' safety in the post-industrial system
ES	F	Maite Barea (SP)	Aging at work
USA	M	J Howard (USA)	New directions for the next decade for the National Occupational Research Program (NORA)
F	M	JL Marie (FR)	New Forms of prevention for the workers
I	F	Irene Figa-Talamanca (IT)	Women, work and health
IND	M	HR Meswani (IN)	Occupational health, competitiveness, economy
FI	F	Maria Hietanen (Fin)	Health risks of exposure to non-ionizing radiation - myths or science-based evidence?

Support opportunities for occupational safety and health professionals from underserved and underrepresented areas to acquire knowledge and information about the science, education and training, and practical aspects concerned with health and safety at work.

Consistent with the goals of NIOSH to provide and offer education and training in occupational health and safety, and to address research consistent with the NORA priorities, support was provided to underserved and underrepresented participants to attend this Congress to learn about occupational safety and health science, topical issues, and education/training advances.

The Congress budgeted Euro 150,000 (" \$210,000 USD) to support participation from less privileged countries. Women were represented on all ICON Scientific Committees, Organizing, and Scientific Program Committees as well as in the keynote lectures program. Special sessions were devoted to the issue of women, work, health, and disability was one of the focuses of the Congress. Persons in need of a scholarship in order to attend the meeting applied for a grant. Those eligible were delegates coming from newly industrialized or in transition countries with a GOP per capita of less than \$15,000 USD. Other eligibility criteria included preference to ICON members and submission of an abstract. More than 300 requests for scholarships were received. For this grant, 31 scholarships were awarded to participants from 25 countries (Table 3).

T a b l e 3
ParticiPants Awarded Grant Sunoort

n	Country	Surname	Name
1	ROMANIA	Adriana	Todea
2	EGYPT	Alazab	Reed
3	ROMANIA	Balaceanu	Gheorahe
4	FYROM	Basarovska	Vera
5	TURKEY	Baydur	Hakao
6	SOUTH AFRICA	Beke	Andy
7	UCRAINA	Bobka	Natalia
8	POLAND	Bortkiewicz	Alicia
9	SERBIA AND MONTENEGRO	Bulat	Peter
10	BRAZIL	Campos	M. Cristina A.
11	THAILAND	Chaiear	Naesine
12	TUNISIA	Charfeddine	Amri
13	URUGUAY	Cousllas	Adriana
14	IRAN	Dehdashti	Alireza
15	ROMANIA	Eniko	Viraah
16	BRAZIL	Faria	Neice N.X:
17	RUSSIAN FEDERATION	Fatkhutdinava	Lilia
18	CROATIA	Gomzi	Milica
19	MALAYSIA	Gurusamv	Javakumar
20	MEXICO	Hero-Garcia	Luis
21	IRAN	Jahanairi	Mehdi
22	THAILAND	Kaewbaonchoo	Orawan
23	FYROM	Karadzinska-eislumovska	Jovanka
24	PAKISTAN	Khuwaia	All Khan
25	PHILIPPINES	Kiat	Wenceslao
26	SERBIA AND MONTENEGRO	Krstev	Srmena
27	THAILAND	Krunakraiwna	Sudthida
28	CHINA	Li	lien
29	LITHUANIA	Malinauskiene	Viliia
30	INDONESIA	Mansyur	Muchtaruddin
31	TUNISIA	Masmoudi	Mohamed Larbi

Conclusion:

This NIOSH funded grant helped to support the attendance of 31 participants from underserved or underdeveloped countries. The information shared is vital to not only the mission of NIOSH but to helping reduce the burden of work-related diseases and illnesses in these countries by information sharing of active research.

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