# The Global Occupational Health Network

GOHNET

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## TOPIC: CHILD LABOUR & ADOLESCENT WORKERS

**Every time a child gets hurt or injured, a huge injustice is done. We collectively have the knowledge to take measures that protect children, and we know it is the right thing to do. It is a great task, but we have the capacity to make a difference.**

Dear Reader,

This GOHNET issue deals with a very important and complex topic, as the effective abolition of child labour is one of the most urgent challenges of our time. The ILO estimates that almost 250 million children worldwide, or an estimated one in every six children between the ages of 5 and 17 years, are engaged in some kind of work activity. Some 170 million can be found in hazardous work that endangers their physical and psychological well-being, and over 130 nations ratified the ILO convention aimed at eliminating the worst forms of child labour.

We all know that the children are the future of our planet, however, without the possibility to enjoy their childhood and pursue their physical and psychological development in a safe, healthy and caring environment, we are bound to loose a great potential for - and their contribution to - a promising future. Instead we face social exclusion, poverty and staggering national economic growth and development.

Awareness on this topic has been raised in the last decade. The existence of child labour and the need for its reduction and eventual abolishment and the adequate protection of children and adolescents are no longer denied. In addition, there is an array of information available. This GOHNET issue provides you with recent studies and information on child labourers and young workers contributed by our collaborators, readers and GOHNET members. We would like to thank all the contributors whom we believe have done a wonderful job in conveying the complex issues and at times hard facts surrounding child labourers and young workers. Special thanks go to our colleague Gerry Eijkemans who is our expert on child labour and to David L. Parker (Park Nicollet Institute, Minneapolis, USA) for the images of children used in this Newsletter. For references please visit our website.

With that in mind, we hope you will be stimulated by the large scope of the articles in this issue.


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## An Introduction to the Topic


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There are millions of working children worldwide. An important part of them are engaged in activities that have a negative impact on their health and development, and that prevents them from accumulating human capital and having higher earnings in later life (2), thus continuing the circle of poverty.

According to ILO estimates there are 351.7 million economically active children in the world (210.8 million between aged 5 to 14 and 140.9 million aged 15 to 17). Nearly 170 million of these children are involved in hazardous work (111 million aged 5 to 14;59 million aged 15 to 17 (7).

The informal economy harbours most child labour and since it is not recognized or protected under the legal and regulatory frameworks, informal workers have a high degree of vulnerability. The informal economy is spread across all economic sectors and may be closely linked to formal sector production, for example, in situations where formal sectors outsource work to the informal economy (13). Even in developed countries the number of children in the informal economy is important. In the United States for example, 25 to 30% of the working children are in the informal economy (14). Less than 5% of child workers are employed in the export manufacturing and mining sectors, and 1 to 2% is employed in export oriented agriculture (2).

About 75% of the working children are engaged in small-scale family-based enterprises (2). Contrary to a general believe that work in the family

## IN THIS ISSUE:


| | |
|---|---|
| An Introduction to the Topic | 1 |
| Development of WHO Training Package for the Health Sector: 'Occupational Risks for Children's Health' | 3 |
| Promoting Students' and Young Workers' Health and Safety by NIOSH/ CDC and Other U.S. Organizations : Available Resources | 4 |
| The Tanzania Occupational Health and Safety Act (OSHA 2003) and Elimination of Child Labour in Tanzania | 7 |
| An Example of a Successful Pilot Education Program on Occupational Health in general Secondary Schools in Greece | 8 |
| Effects of Work on the Health and Safety of Working Children | 9 |
| Collaborative Young Worker Eye Safety Project -Bangladesh | 11 |
| GOHNET News | 12 |
| Planning Committee Meeting of the Global Network of the WHO Collaborating Centers in the Occupational Health to Develop the 2006-2010 Workplan | 13 |
| GOHNET Newsletter - Contributors' Information | 15 |
| How to join GOHNET | 16 |

setting is not problematic, there is enough evidence to support that work in family enterprise or with family members does not necessarily protect from the hazardous exposures. It is the nature of work and not the type of employer that determines the level of hazards (1). A study in the US found that more than half of work-related fatalities in young people in agriculture occurred in family farms (18).

Although the awareness and action around child labour and health has greatly increased, it is still important to increase public awareness. One of the most important challenges is to promote the translation of knowledge and legislation into action, moving good intention and ideas into protecting the health and safety of the children (4). This article gives some characteristics of child labour and reviews some knowledge about the association between child labour and health. By no means does it pretend to present a complete overview of literature or knowledge. WHO is developing a guidance document on the involvement of the health sector in combating hazardous child labour.

## Some History

In 1987 WHO published the outcomes of a study group meeting (6) outlining the history of the effort of the UN system to combat child labour, and expressing WHO's concern about the health of working children. The study group concluded on the need of improvement of statistics on economically active children in a large number or countries. The information on the subject identified by the study group points to a problem of some magnitude derived mainly from the socioeconomic conditions. It was found that most governments had not been able to define the dimensions and demands of "light work", stipulated by the ILO as permissible for children aged 13 to 15. Thus, it was not possible to find any evidence of a faithful application of this concept including the requirement to take into consideration the health and education of children.

The study group indicated the inadequacy of the exposure limits recommended for adult worker to protect children and puts a special emphasis on the psychosocial risk of children at work, and the lack of adequate information on this topic. Moreover, the report identified difficulties to plan and carry out studies on child labour and health and suggested various ways to broaden knowledge on this issue (6).

Since the study group wrote those recommendations in 1987, much has been achieved:

- ILO created the International Programme on the Elimination of Child Labour (IPEC)
- ILO Convention 182 on the worst forms of child labour (including hazardous child labour) was adopted in 1999 and has been ratified by 150 countries (www.ilo.org/ilolex/english/convdisp1.htm)
- ILO, WHO, UNICEF, World bank, NGOs, among other institutions, produced numerous publications about the effects of child labour on health
- NGOs implemented a large number of action programs
- The statistics on economically active children and on children in hazardous child labour have been improved globally, as well as in several countries.
- The countries that ratified Convention 182 started to produce lists of hazardous child labour
- The WHO Collaborating Centre Taskforce on Child Labour was created
- The International Committee on Occupational Health (ICOH) created a Working Group on Child Labour

However, it is worrisome to see that most of the conclusions and recommendations made in 1987 are still valid. Much more still needs to be done to tackle this every day injustice.

ILO Conventions 138 and 182 established the boundaries of work that should be considered inappropriate for children of different age groups. One key issue for countries in applying Convention 182 is the definition of hazardous child labour. The classification of child labour in hazardous and non-hazardous is complex. In reality the impact of child labour on health is determined by a set of factors, which can operate in opposing ways. For extreme situations there is a great deal of consensus. The problem is the extensive grey area where the balance between harm and benefit is not clear. When defining which risks are acceptable for working children and adolescents it is necessary to take into account technical and policy considerations (10).

## Causes of Child Labour

One of the main causes of child labour is poverty. However, inefficiency in the educational systems and in the enforcement of relevant legislation, as well as lack of public awareness also contribute to the problem (2). Cultural aspects as concern the concept of a child, the role of a child in society, work itself, appropriate work for children, and the impact of education on future work opportunities, all play an important role for the levels of child labour (19).

In some societies where the women are kept in strict seclusion due to sociocultural or religious restrictions children are required to work to give support to the work done by the mother at home (20).

The HIV epidemic is another important reason, particularly in some African countries, that is compelling children to work. The epidemic is leaving a great number of orphans resulting in an important number of child-headed families (20).

## The Association Between Child Labour and Health

Exposure to occupational hazards may have acute consequences such as injuries or illnesses, but may also not manifest until years after the exposure resulting in great health burden (10). This burden is carried by the health sector. An important part of the work-relatedness of these health outcomes may go unrecognized mainly due to informal insertion of the children at work, the lack of training of the health professionals to recognize children as workers and the difficulties to establish the causal net, particularly for the outcomes with long latency period and the ones that are difficult to distinguish from non-occupational disease (10). An appropriate recognition of the health burden caused by child labour could guide preventive measures whether it means improvement of work conditions or child labour eradication. These actions would make the workplace healthier and safer benefiting children as well as adults.

There is scarce evidence of the association between child labour and health. Most of the available studies are from developed countries, particularly from the United States and investigate the association between child labour and fatal and non-fatal injuries. The studies investigating diseases, and particularly long-term health outcomes are scarce. A large part of the developed country studies are based on secondary data sources such as worker's compensation claims or emergency department records and there are very few population-based studies. This leads to an underestimate of injuries and diseases (20), (21).

Studies in developing countries often evaluate the child workers' health conditions (see article Shah, Fassa, Eijkemans in this issue). Relatively few health outcomes are evaluated in those studies (only acute diseases, frequently unrelated with work, and injuries). There are very few studies focusing on the association between work and health (4), (6), and (20). Most of the available studies present important methodological limitations, including bias due to design, small sample size, lack of appropriate control groups, poor characterization of exposure and health outcomes, as well as limited data analysis (21). Once most of the studies are cross-sectional, and the comparison groups are non-workers the studies are almost always affected by the workers healthy effect. This is related to the fact that workers went through a formal or informal selection, being healthier than non-workers even before they start to work. Due to this, the comparisons between workers and non-workers highly underestimate the impact of the work on health (21).

There is some useful evidence from environmental studies presenting the special vulnerability of children to some hazards (12), (22). Child workers have specific characteristics such as inexperience and lack of physical or emotional maturity that can make them more vulnerable to hazards than adults (10). Their inexperience and emotional immaturity results in their lower ability to recognize and assess potential risks and to make decisions about them. It can also make them undertake tasks they know are risky to demonstrate their responsibility and independence and to preserve their jobs (10), (22).

Some developmental characteristics of children such as the higher

percentage of water in their organs, tissues and the body as a whole, higher metabolic rate and oxygen consumption, greater energy and fluid requirements per unity body weight and larger body surface area in relation to weight when compared to adults, can affect their absorption of chemicals, dust and vapours and their ability to excrete (22). There is evidence that children are more susceptible to lead, silica, benzene, noise, thermal stress and ionizing radiation (12). Their rapid growth can also make them more susceptible to toxic agents and ergonomic hazards (22). Since most working children are poor, they may be predisposed to occupational disease by poor health, characterized by malnutrition, anaemia, fatigue and debilitation from infectious and parasitic diseases which interact with hazardous working conditions (22), (23).

The available studies on injuries show an important burden caused by child labour. There is evidence that children are at greater risk for work-related injuries than adults. A report from The National Center for Health Statistics (1997) presents an occupational injury rate for children aged 15 to 17 of 4.9 per 100 FTE (full-time equivalent) workers, while the injury rate for all workers 16 years-old and older, based on the same sample, was 2.8 per 100 FTE workers (10).

Using the knowledge about adult workers it is possible to say that an important part of the occupational hazards present long-term effects. Thus, in the case of child labour, illnesses related to work as cancer, infertility, chronic back pain and IQ reduction will be evident in adulthood (4).

The rapid growth experienced during childhood and adolescence can lead to an increased vulnerability to carcinogenic exposures. The increased vulnerability associated with longer periods of exposure (starting in younger ages) could shorten the latency period (10), (22). This rapid growth, combined with the "mismatch" between their size and machines, equipments, including personal protective equipment and tools, could also pose children at greater risk of injuring ligaments and damaging bone-plates. There is scarce information about the impact of repetitive movements, heavy loads and awkward postures among other ergonomic hazards on child health, particularly back strain. The long-term consequences of this health problem are of substantial concern (10). There is also great worry that chemical exposures could alter the hormonal balance and their feedback loops. Due to the importance of the endocrine system during this period of life this chemicals could have devastating effects, inducing reproductive changes, developmental defects, immunological deficits and carcinogenesis (10), (25).

Over the last decades, the great importance of psychosocial risk factors at work has been recognized. This aspect was even more emphasized after the scenario presented by the Global Burden of Disease pointing that the burden of some important psychological problems is increasing in the world (24). The WHO report (1987) stressed the importance of taking this aspect into consideration. The underuse of skills, excess of work, lack of control of work, low payment, difficulties with the relationships at work among others are important psychosocial risk factors at the workplace (6). Furthermore there are psychosocial risk factors specific or more important for children, such as the lack of time for recreation or rest, difficulties to combine work and school, lack of time to stay with the family, sometimes staying away from home, physical punishments, intimidation, conflictive role of the child worker in the family, at work and in the community, among others (6). Additionally, isolation and (sexual) abuse, often associated with child domestic work, can lead to low self esteem, depression, sexually-transmitted disease and early pregnancy (4), (26).

### Conclusions and the Way Forward

The elimination of child labour is a long-term objective, but short-term action is needed to avoid injury and harm to working children. It is necessary to keep in mind that the final goal of elimination of child labour is to improve the child's well-being. Even though much more has to be researched, there is sufficient knowledge and means to prevent the harm. It is necessary to view the eradication of child labour as a process, and to have alternatives to child work which guarantee that children will be better off than they were. When child labour can not be eliminated right way, all efforts should be made to minimize the negative effects on health. These efforts could be reinforced by involving new stakeholders, including the health community and particularly occupational health experts in the process.

The importance, in economic terms, of child workers for the children and their families needs to be correctly assessed. Some children are breadwinners and sometimes their work enables them or their siblings to study. In this situation, the loss of the child's income could have a negative impact on family health and education. When taking action against child labour it is necessary to identify alternatives to guarantee the needed income for the family.

Children should be protected from hazardous work regardless the relationship they have with the employer (a family member or a boss), the size of the enterprise and sector of the economy (formal or informal; agriculture, manufacturing, retail, service, construction or other sectors). They also need higher standards of protection at work than adults because of their special vulnerabilities. Education is of primary importance for children for their present and future well-being and should therefore never be compromised.

The increased vulnerability of children to some substances and the need for higher protection standards make use of limits that are established based on studies in adults - mainly men - for 8 hours a day of work. These are not suitable for children. Thus, the Threshold Limit Values (TLV) are not protective for children and should not be applied (28). The existence of a TLV, however, can be an indicator that the product, substance or process is dangerous. If general public exposure limits exist (for example, on lead), these could be used for child workers. Moreover, if work requires personal protective equipments (PPE) this is another indicator of the existence of hazards. Since gloves, helmets, safety boots are not sufficiently protective for children (they are not designed for them) children should not work in environments where these are needed.

### Final Remarks

It is important to recognize the role of the health sector, particularly of the primary health care and the occupational health services. The primary health care services are very close to the communities able to identify child workers, particularly those enrolled in the informal sector. They should be prepared to act as health promoters informing about the impact of child labour on health and to take the appropriate steps after the identification of child labour cases. Health professionals should also be prepared - with the support of the occupational health and safety professionals - to recognize early signs and symptoms of child labour, to evaluate child worker exposure, and to establish the causal link between the work and health problems.

The elimination of hazardous child labour is not a free ride. It is necessary to take serious economic and social measures to eliminate the roots of child labour. Decent work policies need to be in place to make sure that the health and safety of working children will never be compromised.

Every time a child gets hurt or injured, a huge injustice is done. We collectively have the knowledge to take measures that protect children, and we know it is the right thing to do. It is a great task, but we have the capacity to make a difference.

## Development of WHO Training Package for the Health Sector: 'Occupational Risks for Children's Health'

Summary by Evelyn Kortum, Occupational Health Programme, WHO

Ivan Ivanov from WHO Regional Office for Europe (since 1 July 2005 with the Geneva Occupational Health Team) and Gerry Eijkemans of the Occupational Health Programme at WHO developed a WHO Training Package for the Health Sector on Children's Health and the Environment. It is entitled 'Occupational Risks for Children's Health'. The module is to be used by trainers from the countries to train health professionals. The module forms part of a WHO training package on children's health and environment. A train-the-trainers course for some European countries was organized by the WHO European Centre for Environment and Health in Rome in June 2005.

The learning objectives of this module are to

- understand ways in which occupational risks can affect children's health,
- develop preventive strategies to manage occupational risks which can potentially affect children's health, and
- provide advice to current and future parents about how to avoid and deal with occupational risks which have an impact on their children.

The course explains exposure to occupational risks before conception, during pregnancy and during the different phases of child development intra-and extra-utero. The occupational risks to which present and future parent can be exposed are discussed with examples encompassing chemicals, physical and biological agents, and strenuous physical labour.

In this process, the role of the health care providers is very important. They can help to identify hazards, evaluate exposure and provide advice on planning the pregnancy. In this way healthcare providers can contribute to prevention of hazardous exposure and decrease the degree of occupational risks for their patients. Health care providers can make recommendations to the employer and the worker on these issues. Different intervention methods for exposure reduction are discussed during the delivery of the training module.

Lastly, the module explains the worst forms of child labour and the ILO Convention No. 182 and hazardous child labour (below 18 years of age). It outlines hazards for working children such as accidents, biological, chemical, ergonomic and physical hazards, as well as working conditions and psychosocial risks. Health effects of hazardous child labour can range from acute poisonings to injuries and lasting effects such as, for example, hearing loss or cancer.

*"Work is the source of our subsistence. It can also be a fulfilling joy for both adults and young people."*

# Promoting Students' and Young Workers' Health and Safety by NIOSH/CDC and Other U.S. Organizations : Available Resources

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## Introduction

The increasing deficit of workers in the U.S. has resulted in employers hiring a greater number of workers of which many are teens and students. Most of these young workers are unskilled, seek temporary and part-time work, and are willing to work for low wages. They work after school hours, weekends, holidays, and during summer. Many vocational-technical school students work during school hours in co-op, school-to-work, or tech-prep programs. The 2003 NIOSH Alert publication (1) indicated that 70-80% of teens have worked for pay during their high school years outside of home (2) and also faced workplace hazards. The U.S. Bureau of Labor Statistics (3) reported in 2000 that 2,9 million students (age 15-17) worked during the school year, and 4,0 million students (age 15-17) worked during the summer. U.S. students work at service jobs such as cashiers, gas stations attendants, cosmetology assistants, photography, entertainment/recreation, and health services; in restaurants; retail, grocery stores; manufacturing; agriculture, and in construction.

## Young Worker Injuries

The problems we face with young workers are lack of awareness, experience, training, and risk taking behavior which result in injuries. NIOSH estimates (1) that each year in the U.S. 240.000 adolescent workers suffer work-related injuries, 77.000 require treatment in hospital emergency rooms. Unfortunately 67 student/young workers (under age 18) die each year because of work-related injuries. The major causes of fatalities are motor vehicles, machines, electrocution, exposure to harmful substances and environments, falls, and homicide (see Figure 1).

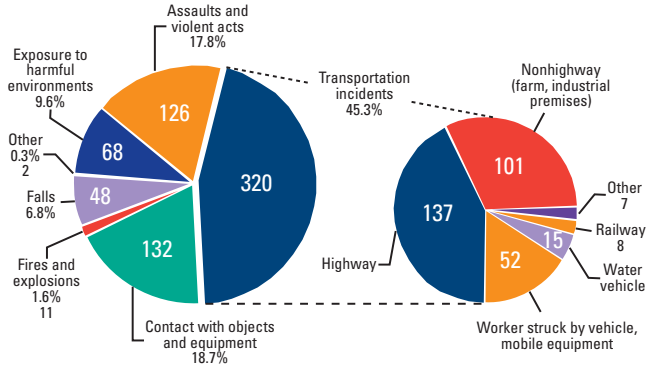


*Figure 1. Fatalities among workers aged 17 and younger by event or exposure (1992-2002), NIOSH Chartbook 2004.*

During 1980-1995 the fatality rate of 16-19 year old workers was 3,4 per 100.000 workers, representing a 3,7% fatality distribution of all work-related deaths (1). The Insurance Institute for Highway Safety states that teens are four times more likely to be involved in an automobile crash and three times as likely to die in one. Workers in the first year of their job are at higher risk of sustaining a work-related injury. Many of those injured indicated that they had not received any training in how to prevent the injury they sustained. Generally speaking, young workers have 2-3 times the risk of receiving non-fatal injuries as compared to all workers' injuries (4) (see Figure2). The direct and indirect cost of the young workers' work-related injuries amounted to $5 billion (5).

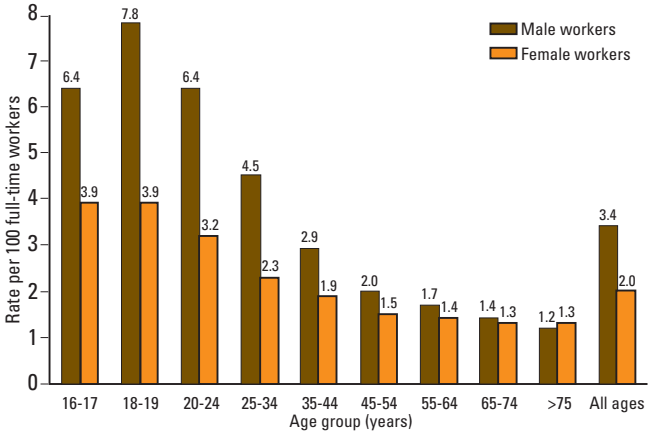


*Figure 2. Non-fatal occupational injury rates (1998), NIOSH Chartbook 2000.*

**Contributing Factors to Young Worker Deaths** (6) (from NIOSH Fatality Assessment and Control Evaluation Program)

- Failure to recognize hazardous work situations
- Absence of comprehensive safety programs in the workplace
- Absence of training programs appropriate to young workers
- Failure of employers to comply with Federal and State child labor laws
- Failure of employers to provide equipment with safety features
- Lack of personal protective equipment or non-use of it when provided
- Lack of supervision
- Employer failure to comply with child labor laws
- Inexperience of young workers, and learning unsafe behaviors from co-workers

**Regulatory enforcement at vocational-technical schools.** The U.S. Dept. of Education provides no occupational safety and health regulations or guidelines for the 50-State school systems. The Federal Occupational Safety and Health Administration (OSHA) has no jurisdiction over the schools in any State. 26 U.S. States have their own State-regulated OSHA plans which have jurisdiction over the schools' facilities and employees, but not over the students.

## Addressing the Injury Problem

Addressing the problem requires a multi-faceted effort by all the 50 States, local school districts, voc-tech, health, and government school textbook publishers, NIOSH and other Federal agencies, and other organizations - including community based youth programs and occupational safety and health (OS&H) organizations. One of the main goals of all these entities is to transfer and communicate OS&H information and requirements to schools, young workers, and their teachers, as well as to parents, and employers. While there is a Federal network of agencies collaborating to address young worker issues (www.youngworkers.net ), there is not a single Federal agency totally responsible for coordinating and promoting OS&H in high schools by training students in OS&H for after school hour jobs and off days. Many employers will provide some basic OS&H training to the students, but some employers are not aware that certain jobs are prohibited to young workers (as specified by the U.S. Department of Labor (DOL) as Hazardous Orders or as State requirements). Most States' Departments of Education have OS&H requirements/competencies that teachers in vocational schools must meet. The schools' Principals/ Administrators have the ultimate responsibility for OS&H in their schools. Many teachers are required to teach OS&H and test the students' knowledge in OS&H. Many school districts have their own full-time OS&H Coordinator that helps the teachers and school supervisors for safety and health issues.

## NIOSH Efforts in Reducing Student & Young Worker Injuries

NIOSH has developed Alerts for young workers, OS&H training curricula, a Safety Checklist Program for Schools in a CD-ROM format, conducted young worker community-based health education outreach projects in OS&H, collaborated with the National Skill Standards Board, and other organizations, and promoted OS&H Teacher and Student national competition and awards (these are discussed further in detail). One of the goals of the NIOSH projects is to produce informed school administrators, supervisors, teachers, and students who are capable of recognizing occupational hazards, controlling and remediating these hazards through safe work practices. The expectation is that graduating students can join the workforce as safer workers.

## NIOSH Alert

The following are NIOSH recommendations for the U.S. based on the NIOSH Alert:

What **Students** Should Know to Prevent Workplace Injuries
1. Know about and follow safe work practices (www.youthrules.dol.gov)
2. Ask about training
3. Ask about job hazards
4. Know your rights (www.osha.gov/SLTC/teenworkers/index.html)
5. Know the laws (www.youthrules.dol.gov)

What **Parents** Should Know to Prevent Workplace Injuries
1. Take an active role in your child's employment
2. Know the laws (www.youthrules.dol.gov ) (www.osha.gov/SLTC/teenworkers/index.html)
3. Be aware of young workers' rights
4. Share information with other parents

What **Educators** Should Know to Prevent Workplace Injuries
1. Talk to students about work
2. Ensure the safety of school-based work experience programs
3. Include worker safety and health in the school curriculum (www.cdc.gov/niosh/pdfs/99-141.pdf)
4. Know the laws (www.youthrules.dol.gov)

What **Employers** Should Know to Prevent Workplace Injuries
1. Recognize the hazards (www.dol.gov/dol/topic/youthlabor/hazardousjobs.htm)
2. Supervise young workers
3. Provide training
4. Know and comply with the laws* (www.youthrules.dol.gov)
5. Develop an injury and illness prevention program

* For State laws visit (www.ilsa.net)

The Alert is available at www.cdc.gov/niosh/docs/2003-128/2003128.htm

**Curriculum Training Materials.** NIOSH developed an OS&H Student Manual for Electrical trades and field-tested it in schools:
- It explains the dangers of electrical shock
- Describes burns that can be caused by electricity
- Provides an overview of the safety model
- Explains safe work practices
- Describes a safe work environment
- Illustrates how to evaluate and control the hazards
- Includes many case studies

The Electrical Safety Student Manual is available cost free from NIOSH as Publication # 2002-123 or can downloaded from the NIOSH Web site at www.cdc.gov/niosh/docs/2002-123/2002-123a.html

Curriculum Training Materials Contracts and Grants. NIOSH had contracts and co-operative agreements with universities, Massachusetts Dept. of Public Health, and other organizations which developed and produced safety curricula for trades and agriculture. Other cooperative agreements led to the production of a model curriculum in OS&H targeting 9th and 10th graders (draft) which is being tested in 10 States. NIOSH is collaborating with the National Association of State Directors of Career Technical Education consortium (NASDCTEc) to incorporate OSH competencies into their 16 Career Clusters.

NIOSH Safety Checklist Program for Schools. This is a safety program by NIOSH, based on 82 checklists (provided in a CD-ROM) designed for use by people with or without OS&H experience or background. It can be used by Supervisors/Administrators, Educators, Workers/Students, Teams, and Safety Professionals. About 50,000 copies were already sent out in the U.S. and worldwide.

## Safety Checklist Program Contents

Chapter 1 - Making sense out of the OS&H regulations
Chapter 2 - How to establish an effective environmental, safety, and health program and maintain it
Chapter 3 - Implementing the checklist program
Chapter 4 - Checklists
Appendix A: Resources
Appendix B: Using the safety checklist program to teach workers and students about occupational safety and health
Appendix C: Tips for Making an Inspection a Cooperative rather than an Adversarial Experience.
Appendix D: Emergency Procedures in school in the event of a Chemical Spill
Appendix E: Text of Selected OSHA Regulations. Links to OSHA Industry and Construction Regulations.

### Additional OS&H Databases included in the CD-ROM as Supporting Materials

- NIOSH OS&H databases
- Construction Risk Control Integration Guide
- ILO Hazard Datasheets by Occupation
- NIOSH: Occupational Safety and Health Databases
- NIOSH Small Business Resource Guide
- Indoor Air (EPA's Tools for Schools)
- OSHA and EPA Regulations
- OSHA Construction
- OSHA Doctor
- OSHA Small Business Start-up Kit
- MSDS and hundreds of links to other databases

The Safety Checklist Program for Schools is available cost free from NIOSH as Publication # 2004-101 or can downloaded from the NIOSH Web site at www.cdc.gov/niosh/docs/2004-101/default.html.

### NIOSH Community Outreach Program for Adolescent Working Students

This program covered OS&H for students in retail sales and service jobs in three cities, in two separate States. Risk at retail sales and service jobs are cuts, burns, strains from lifting, and other injuries. Youths are barred from working in the most dangerous occupations. The three community programs accomplished the following: They organized local advisory boards, conducted needs assessments, trained peer (student) educators, conducted community and school workshops, developed curriculum with local teachers, conducted public information campaigns and workplace training, produced video tapes, conducted job training programs, collected baseline and follow up data. A NIOSH publication (#99-141) entitled Promoting Safe Work for Young Workers: A Community-Based Approach resulted from this collaboration. It can be ordered at no cost or can be downloaded from www.cdc.gov/niosh/99-141.html .

A second publication recently released is #2005-134, Working Together for Safety: A State Team Approach to Preventing Occupational Injuries in Young People.

### National Skill Standards

NIOSH collaborated with the National Skill Standards Board (NSSB Institute) and its Councils/Voluntary Partnerships for the development of the first four national skill standards for the following economic sectors: Manufacturing, Sales and Service, Information and Communication Technology, Education and Training. Currently NIOSH is working with Hospitality and Tourism sector, and the Biotechnology sector is coming up. NSSB was originally created by the U.S. Congress (PL 103-227), and was charged to develop guidelines for voluntary, nationwide, unified competency standards for use in schools and in the workplace. National Skill Standards include occupational safety and health. Employers and workers, educators & trainers, students, State and Federal Agencies, union/worker representatives, workforce development professionals, communities and parents will all benefit with the National Skill Standards. An example of a successful partnership for including OSH requirements/competencies is the one with the Manufacturing sector. Their Web Site is /www.nacfam.org/mission.htm.

A 2004 paper explaining the national skill standards and the OS&H elements is entitled "Enhancing Occupational Safety and Health Through Use of the National Skill Standards" (authors: John Palassis, Paul A Schulte, Marie Haring Sweeney, Andrea Okun) Int J Occup Environ Health 2004, 10:90-98) is available by request from NIOSH/CDC at jpalassis@cdc.gov.

NSSB is now a private ongoing entity funded by different organizations and not by the Federal government.

**NIOSH Partnerships.** NIOSH has developed productive partnerships that promote occupational safety and health among students and teachers and vocational associations.

(A) with SkillsUSA — largest voc-tech student-organization (260.000 members)

(B) with Association for Career and Technical Education (ACTE) — largest voc-tech teacher-organization (38.000 members)

### Safety Competition Award Program

NIOSH established two occupational safety and health awards for vocational education students and teachers. In 1997, NIOSH established an annual occupational safety and health scholarship competition for SkillsUSA students. The SkillsUSA Leadership Program includes OSH competencies. In 1998, NIOSH established a second awards program, through ACTE, to recognize outstanding contributions to safety instruction by vocational teachers.

### Efforts by Other Federal Agencies for Young Workers

- Centers for Disease Control and Prevention (CDC)/ATSDR (www.atsdr.cdc.gov/child/ochwebpgforstudents.html)
- U.S. Department of Agriculture (cyfernet.ces.ncsu.edu/cyfres/browse_2.php?search=Teens)
- Environmental Protection Agency (www.epa.gov/greenkit/student.htm)
- Federal Emergency Management Administration (www.fema.gov/kids/teacher.htm)
- U.S. Dept. of Labor (DOL)/Wage and Hour Division (www.youthrules.dol.gov )
- OSHA/DOL (www.osha.gov/SLTC/teenworkers/index.html)
- National Institute of Environmental Health Sciences (www.niehs.nih.gov/science-education)

### Curricula Developers in OS&H

Specific instructions and draft curricula in OS&H for teachers/students were also developed by:

- Textbook publishers in voc-tech education
- National Safety Council & other safety organizations
- Several Universities - Ohio, Nebraska, Missouri, Oklahoma
- Different occupational organizations exist that develop curricula, e.g., EOHSI (www.eohsi.rutgers.edu), CORD (www.cord.org) and many others

### Various Organizations for Young Workers

- California Task Force on Young Worker Health and Safety (www.dir.ca.gov/CHSWC/Youngworkerdesc.html)
- Child Labor Coalition (www.stopchildlabor.org)
- Farm Safety 4 Just Kids (www.fs4jk.org)
- Massachusetts Dept of Public Health (www.mass.gov/dph/bhsre/ohsp/teens/page1.htm)
- Texas Engineering Extension Service (TEEX-OSHA) Texas A&M Univ. (teexweb.tamu.edu)
- U. California-Berkeley/LOHP(socrates.berkeley.edu/~lohp)
- U. California-LA/LOSH (www.losh.ucla.edu)
- Washington State/Dept. of Labor and Industries (www.lni.wa.gov/WorkplaceRights/TeenWorkers/default.asp)
- Wisconsin COSH (http://www.worksafe.org/resources/cosh.cfm then click Wisconsin; or try my.execpc.com/~wiscoshm/hnslinks.html
- Wichita-Hutchinson Labor Federation of Central Kansas, AFL-CIO (www.ksworkbeat.org/TeensatWork_/teensatwork_.html)

### Conclusion

Much effort is given by States and local governments, NIOSH, and other organizations in promoting a safe workplace and reducing injuries among students and young workers. In time, the effectiveness of these efforts will be indicated by a reduction of injuries in schools and in the workplace.

# The Tanzania Occupational Health and Safety Act (OSHA 2003) and Elimination of Child Labour in Tanzania

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## Introduction

Child labour is one of the most serious social problems in Tanzania others being HIV/AIDS, unemployment, illiteracy, environmental degradation, corruption, and lack of essential social services. According to National Policy on the Elimination of Child Labour, child labour is on average twice as high in rural areas as compared to urban areas. The policy also proclaims that one out of ten working children in rural areas are engaged in agriculture thus representing more than 70% of the total number of working children in the country (1).

According to the Tanzania country Report 2000/2001 (Child Labour in Tanzania: Country Report 2000/2001 Integrated Labour Force and Child Labour Survey) (2) there were 1.2 million children involved in the worst forms of child labour.

The national policy also acknowledges the gender dimension of child labour where young girls work as domestic servants particularly in urban areas. This category of working children is normally invisible as their work activities are most of the time restricted within homes of their employers where access is limited and work is done in isolation. This makes collective bargaining and unionisation a difficult task.

The national policy identified forces of 'supply' and 'demand' that fuel child labour in the country. Supply forces include poverty, rural urban migration, tradition and culture (such as polygamy), lack of appreciation of educational value, HIV/AIDS (contributing to increasing number of orphans), and inadequate enforcement of legislation. The main demand force is the preference by some employers to employ children due to a number of reasons, for example, children's body size, the faithfulness, honesty and sincerity of children, the agility of children, ignorance of national legislations and their own rights, and the inability to join trade unions and bargain collectively.

## Child Labour and Labour Inspection Regime in Tanzania

The authority of any country's labour inspectorate is derived from the national law governing occupational health inspections. These laws are supposed to reflect the provisions of the basic international instrument, such as the ILO Convention No. 81 of 1947. This convention is supported by a protocol (Protocol of 1995) which reaffirms the principles of the basic standards and promotes its application to non-commercial services. Labour Inspectorates also may derive their authority in child labour issues from other instruments such as ILO Convention No. 129 of 1969 on Labour Inspections in Agriculture. Standards found in these conventions and protocol provides an indispensable and universal framework for the status and functioning of labour inspections at national levels.

The barrier to effective compliance with international child labour standards can be many, including political, legal, economic, structural and cultural factors and they can appear at any level - from national to the field (3). However, this article will attempt to look into the legal constrains facing child labour inspection in Tanzania.

## The Legislation

The legislation that was responsible for workplace inspections was the Factory Inspectorate Ordinance that was enacted in 1958 during the colonial rule. The ordinance had significant limitations: The ordinance had failed to cover all workplaces and all categories of workers since it consisted of a narrow definition of a workplace; the ordinance recognised factories as the only criteria for a work site to qualify as a 'workplace'. All work sites without a factory were not regarded as workplaces; consequently, these workplaces did not qualify for an inspection. As time went by, the ordinance was superseded by newly emerging issues such as technological developments and the intensification of child labour. The ordinance also did not take into account the role of other stakeholders such as workers and their trade unions in workplace inspections. The ordinance was also built upon the concept of 'inspection' and completely ignored 'monitoring' as one of the tools in ensuring the safety and health of workers (including working children). Finally, since the ordinance did not take into account child labour, no sanctions existed against child labour practice.

After a protracted struggle by workers and their organisations, the government enacted the Occupational Health and Safety legislation in March 2003 and it replaced the Factory Inspectorate Ordinance of 1958. Unfortunately though the government of Tanzania has ratified conventions Convention No. 81 and No. 182, and despite the suggestions from trade unions, the new legislation has not clearly indicated the role of Government Inspectors in eradication of child labour in Tanzania.

## Problem Area 1: The Omission of Child Labour Issues and Responsibilities

The marginalization of child labour in the inspectorate regime can be witnessed in Part I: Preliminary Provisions Sect. 3 where the definition of the terms 'Child Labour' and 'Minimum Age' are not included. It is doubtful whether regulations governing child labour inspections will be put into place by the relevant authority, which is the Ministry of Labour, Youth and Sports Development.

The duties of Government Inspectors are provided under PART II [Section 6 (1)] - 'Powers of Inspectors' and under [Section 7 (1)] - 'Investigations'. None of these duties give a precise and clear indication that the Government Inspectors have a legal mandate over matters related to Child Labour. This may create implementation obstacles during workplace inspections or during legal proceedings.

Though OSHA 2003 has recognised the role of workers in workplace monitoring none of the functions of Workplace Health and Safety Representatives provided under Part II [Section 12 (1)] - 'Functions of Safety and Health Representatives' - clearly state the role of these representatives in eradication of child labour.

The Act has also recognised the role of workplace Health and Safety Committees as stipulated under Part II [Section 14 (1)] - 'Functions of Health and Safety Committees' - but none of the roles provide a clear indication whether these committees will have a legal mandate over child labour matters.

Under Section Part X [Sub section 95 (1 - 6)] of the Act - 'General duties of employers or occupiers or self employed persons' - are stipulated but none of the duties conferred by the act directly require the employer to desist from practicing child labour.

## Problem Area 2: Emphasis on Inspection to the Detriment of Monitoring

One of the most potent means of addressing child labour is to regularly check (monitoring) the places where children may be working. Child Labour Monitoring (CLM) is the active process that ensures that such observation is put in place and is coordinated in an appropriate manner (4).

According to the ILO Technical Unit on Hazardous Child Labour (HCL) and Child Labour Monitoring (CLM) a CML must always be linked to and work through the labour inspection system as Government Inspectorate Departments or Agencies are the main institutions mandated to address child labour in workplaces (4). The CLM must also take into account other social partners including trade unions, workers, teachers and communities. However, like its predecessor, for example, the Factory Ordinance, the new legislation, such as OSHA 2003 is also built upon the concept of 'inspection' rather than 'monitoring'. As a result, most responsibilities have been assigned to Government Inspectors alone while the role of other important stakeholders like workers and their trade unions is marginalized. The concept of inspection regards workplace evaluation as a 'one-time' event that does not require a lot of personnel. Hence it can be accomplished

by the few government inspectors alone while monitoring is a process that requires time and many players for it to be accomplished. The concept of inspection also requires that the Inspectors wield a lot of legal power as observed in OSH Act Part II Subsections 6(1), 7(1) and 10(1 & 2). It is based upon the 'policemen' attitude' by 'forcing' people to change. On the other hand, monitoring is based on 'persuading' people to adopt a change because it is a process. With this reality, even if OSHA 2003 had taken into account child labour, it is most probable that the inspectorate regime would fail in the eradication of child labour due to this conceptual limitation.

### Conclusion

The Labour Inspection regime in Tanzania as stipulated in the OSHA 2003 (5) requires review so as to address conceptual and contextual limitations. Child labour issues must feature prominently in the act as it is becoming a serious problem in the country and it has negative implications on other employment issues such as the promotion of health and safety, job security for adults, casualisation of labour and loss of trade union membership. Child labour also denies children their basic rights including the right to education. The new review should strive at introducing the concept of monitoring into the labour regime where the roles of all stakeholders (employers, workers, trade unions, communities and government) have to be clearly defined and financially supported.

## An Example of a Successful Pilot Education Program on Occupational Health in general Secondary Schools in Greece

A report on an ongoing pilot multistage program to increase awareness of occupational health among general secondary school students in the Athens Municipality of Psychico

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Most adolescents in Greece receive only scarce information about work accidents (mainly from mass media) and general environmental health-effects (primarily at school), but no tuition on occupational health (OH), before they enter the labour market. Training of young workers in OH is often inadequate. This prompted in 2002, a five year pilot education program under the aegis of the Mayor, with the endorsement of the Municipal Council and with the participation of the Committee of Health and Welfare of the Athens Municipality of Psychico, in collaboration with the administration of seven general secondary schools in this Municipality, operating on existing municipal and school resources.

The aim of the program is to contribute to the national planning of the integration of education in OH in general secondary schools and to the preparation of appropriate educational material, which would fill students' knowledge gaps resulting from the current school curriculum inadequacies, and also to increase awareness of OH among students in seven general secondary schools in the municipality.

### Stages of the Program

The first stage was carried out in 2002 and focused on a study on students' attitudes (ages 17-18) towards and knowledge of OH and on school presentations by an OH expert. A survey of general secondary school teachers' opinions about education in OH in schools was also conducted.

The second stage materialized in 2004 and focused on an essay competition among students, tuition of students by appropriately trained school teachers, pertinent publicity in the mass media and a public municipal event comprising presentations by experts and dignitaries. The third stage consists of the publication by the Municipality of a book entitled "Health protection at Work: A subject for education of general secondary school students", and of school lectures by an OH expert.

### First stage: 2002

#### A) The Study of Students' Attitudes and Knowledge regarding OH

Secondary school books and other educational material on OH could be significantly enhanced through students' involvement. Experts' and teachers' views alone might not serve adequately the students' actual educational needs.

We studied the interest, perceptions, attitudes and extent of knowledge of the students before they left the general secondary school, using a self-administered multiple-choice and open-ended questionnaire completed in class under teachers' supervision. The survey focused on (a) the relationship between work and disease, (b) disease-related work hazards and the feasibility of effective protection against these, (c) high- and low-risk occupations in relation to diseases, and (d) OH services and law in Greece. It was carried out in six (private and public) general secondary schools of the municipality of Psychico among all (855) eleventh and twelfth grade students. Of these, 80% lived in different parts of Athens.

Two thirds of the students lacked any knowledge or had wrong ideas which probably reflect misconceptions of the general public about (a) ill-health-effects of work (68%) and modern capability of rendering most jobs "healthy" by applying correct occupational health principles, rules and procedures, for most working people (66%), and (b) existing Greek preventive or diagnostic OH services or organizations (73%). Many students (37%) also did not know anything about the current laws concerning occupational diseases.

A relatively high proportion (38%), among those recognizing the presence of various types of OH hazards (70%-90% of the total), were unaware of the possibility of protection against chemical or psychological work hazards. A few students (32%) alluded to correct and many others (59%) to incorrect examples of cases of occupational diseases. Most of the latter group (63%) had only heard, and some (15%) had solely read about the incidents they described.

Most students (85%) had wished they had been taught about OH hazards and disorders and protection against them in secondary school so as to (a) protect their own health at work (68%), (b) acquire knowledge on an interesting subject (17%), (c) avoid choosing an occupation hazardous to their health (15%), and (d) protect the health of their future colleagues (4%). A minority of students (11%) did not want to learn anything about the subject. Of these, 50% considered the subject generally uninteresting and 21% thought that the occupation they were to practice was always hazard-free.

Most Greek general secondary school students appear to be strongly motivated to learn about OH despite their heavy school workload. Information on (a) causes for unwillingness to learn about OH, (b) various misconceptions about occupational diseases, and (c) relevant essential knowledge gaps identified by the survey, which correspond to omissions in the current national school curriculum, could be utilized in the preparation of appropriate OH school educational material. Lastly, the questionnaire used could be a useful tool (also in other countries), for the evaluation of any change of attitudes or of any increase in knowledge, if it is used as a baseline before the implementation of OH education programs and after their integration in schools.

#### B) The Survey of Teachers' Opinions about Education in OH

In the same six schools, 114 teachers were given a confidential short questionnaire with open ended questions, on which they stated their views on the usefulness and the manner in which OH should be integrated into the curriculum of general secondary schools in Greece. Of these, 43% recommended that OH tuition be predominantly included in the Biology course and 54% that it be apportioned horizontally across a wide range of unit courses

### Second stage: 2004 - The Essay Competition on OH in Schools

To increase the awareness of young people on OH, the Municipality of Psychico announced six prizes and four Commendations for an Essay Competition on the subject "Protection of Health at Work: The case of construction and building industries". Following an invitation by the Mayor, E. Neofytos, the competition took place during the 2004 European Week for Safety and Health at Work (18-22 October 2004) in seven schools in the municipality. The Municipality distributed ample educational material on OH, one month in advance, to be used by teachers and students. Teachers guided the students to appropriate sources of information and references a few days before the competition and they also introduced them to the subject on the day of the competition at the beginning of the essay-writing session within the framework of the Modern Greek language unit course.

Most students showed a tendency to overestimate OH hazards, whereas they underestimated the feasibility of protection of workers' health against them. The influence of wrong beliefs conveyed by biased mass media on students' views was also evident in the essays. The study of their content would provide useful guidance for the production of educational OH material for general secondary school students.

### Third stage: 2005 - The Book on Health Protection at Work

A book containing the ten best essays, the key note addresses of the award ceremony and the results of the aforementioned study of attitudes and knowledge of students on OH will be published by the Municipality of Psychico. This book will be distributed free of charge to the students and teachers in the seven schools which participate in this program. It will also be offered to schools nationwide on request, to officials in the Ministries of Health and Social Solidarity, Employment and Social Protection, National Education and Religions, Employers' and Employees' Associations, and to public libraries. The main authors of this book are the students themselves who will be acting as the educators of other adolescents, contributing effectively to the increase of their awareness of OH matters.

## Effects of Work on the Health and Safety of Working Children

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### Introduction

There are 352 million economically active children between 5-17 years old in the world, Among them there are 211 million 5 to 14 year olds. The majority of the child workers on this age group are in agriculture and services while those between 15 and 17 years-old work are in services, manufacturing and retail (1).

Since the earliest times, children have been involved in and contributed to the socio-cultural and economic life of their families. There is a common sense that within the family circle they learn various skills without any ill treatment and in this process prepare for their adult life. In performing these tasks, the child feels useful and important, and this sort of work instils in him/her a sense of responsibility towards others, and sense of belonging.

However, great number of children, start to work very early in life, they work for long hours and in hazardous work, compromising their time to rest and play, as well as, having a negative impact on schooling and health. (2) It is estimated that among the economically active children 170 million are enrolled in hazardous work (1).

In several places that employ child labour the working conditions are very bad because children are frequently employed by small workshops or perform home-based work. These are often borderline to legal requirements. Open electrical wires, lack of first aid facilities, poor ventilation and sanitation are some examples of unsafe working conditions. These conditions are mainly due to uncaring management and generally could be eliminated without technological modifications. The hazards related to the nature of work vary according to the type of occupation, the working conditions and exposures (3).

In general, children face the same hazards as adults when working in the same place. However, the effects of child labour on health could be higher due to the tasks assigned to children or the biological differences among adults and children. Children may also be provided with makeshift tools and protective equipment meant for use by adults, which could be inappropriate for their use (4).

There is epidemiological evidence from studies on young workers, as well as, from environmental and experimental studies showing that children could have higher vulnerability to lead, silica, benzene, noise and ionizing radiation than adults. There are also theoretical concerns that children and teens could present higher risk of cancer and musculoskeletal problems once they are in a rapid period of growth (4). Thus, this study summarizes the available information about the impact of child labour on health.

### Methodology

This review includes around 400 papers, monographs/documents, including 139 studies in ten developed and thirty developing countries. Most of them were from developed countries, particularly the United States and focused on fatal and non-fatal injuries. The few studies from developing countries frequently presented methodological problems and a poor characterization of exposures and outcomes, lack of a comparison group and limited statistical analyses. Only a few studies focus on work-related diseases and on long-term health effects of child labour.

### Fatal and Non-fatal Injuries

Fatal and non-fatal injuries are probably the most visible negative effect of work and one of those which cause the greatest burden. Data from the US point out that child workers in mining had the greatest burden due to fatal and non-fatal injuries followed by agriculture and construction (5). Children employed illegally are at least 10 times more at risk of injury than those working under legally sanctioned conditions (6). In two US studies incidence of disability varied between 15.0 per cent (7) and 43.5 per cent (8) due to injuries in working children in various sectors.

### Agriculture

The studies in agriculture support that children frequently start to work at a very young age and frequently work full time. Injuries, pesticides and nicotine poisoning are important problems in this sector (5),(9),(10). Studies from developing countries identified important prevalence of fatigue, headache, respiratory and musculoskeletal problems among others, but it is difficult to capture the full dimension of its importance due to the small numbers of studied subjects or the lack of comparison group. In a coffee plantation in Tanzania children had suffered from wild animal attacks, snake and insect bites (11). In the US, although only about 8 per cent of all young workers are employed in agriculture, 40 per cent of work-related deaths of children and adolescents under the age of 18 occurred in agriculture (14). In the developed countries, agricultural machines were the leading cause of death. They contributed to 68.6 per cent of the deaths and of these 44.0 per cent were tractor-related. The adolescent workers were at greater risk than adults for drowning, suffocation, poisoning and electrocution (13). More than half of the fatal injuries in agriculture occurred on family farms (12).

### Manufacture

The hazards and the effects on health vary widely according the type of industry or even from one occupation to the other. However, among the studied industries there are some common hazards. Child workers

in leather, glass, textile and chemical factories and mechanics workshops were exposed to several chemical hazards, excessive heat, awkward postures and presented laboratorial abnormalities in blood and urine, respiratory and musculoskeletal problems (14), (15), (16). However, most of the studies were descriptive and make it difficult to evaluate risks.

### Domestic Service

Children in domestic services, a typical activity in developing countries, work for long hours, frequently live at the worksite and sometimes do not have days-off (17). According to some studies there are children who suffer from physical violence (18), sexual abuse (19) and had a history of injuries, particularly cuts and burns (18). Children in domestic service also present higher risk of musculoskeletal pain than non-workers (20).

### Retail

In restaurants and hotels children work long hours. They present a high risk for injuries, particularly burns (5). In developing countries they often live at the work site. In developed countries, the child workers in restaurants and bars, automobile stores, retail stores are exposed to several chemical hazards such as cleaning agents, paints, solvents, caustics, hydrocarbons, bleach, alkaline corrosives, gases, vapours, fumes, industrial cleaners, pesticides and heavy metals. Due to such exposures they could present irritation of the eyes and throat, impaired vision, nausea, and/or dizziness and skin burns (21).

The working street children sell merchandise, shine shoes, wash cars and beg. Descriptive studies point that a substantial number of these children were using inhalers, alcohol and other drugs. They have a poor nutritional status, but those who retained contact with their homes were better off than the others who did not have contact (24).

### Other Sectors

The few descriptive studies on construction report that work accidents, back pain and respiratory problems are common in this sector (25). In mining, children are exposed to bad living conditions and sanitation. Diseases such as dysentery, malaria, diarrhoea, cholera and stomach ache are frequent. Some children sell drugs and are involved in prostitution. Other children are exposed to hard physical work, mercury, lead, rock dust, noise, heat, vibrations and underground work. The main health problems reported were of a respiratory, musculoskeletal and dermatological nature (26), (27).

Descriptive studies about scavengers and rag-pickers point that their main problems were injuries, particularly cuts, wounds and burns, dermatological, respiratory and stomach infection. Physical and sexual abuse as well as use of alcohol and drugs are also important problems (22), (23).

There are several descriptive studies on prostitution and evidence that children in prostitution work long hours, frequently without days-off. About half of them do not use condoms. Their main problems are sexually-transmitted diseases and AIDS, alcohol and drug abuse, unwanted pregnancy, physical and sexual violence and some of the child prostitutes are in bondage situations (28), (29).

### Child Labour and Nutrition

Some studies found that child workers in domestic services and restaurants had a better nutritional status than non-workers. Some employers provide food for workers which could improve their nutritional status. However, this finding could also be explained by the fact that when the employers select a worker they already chose those in better health conditions. In this case, the workers would have better nutritional status than non-worker even before they start to work. Other studies on domestic service and restaurants, as well as, studies on construction found that workers had a worse nutritional status than non-workers. In this case it is difficult to establish if this condition would be due to the job or would reflect socioeconomic differences existent before the children start work. Probably, these associations will vary a lot from one country to the other and in different occupations, depending on local particular situations. However, it is important to keep in mind that if child labour has a positive impact on nutrition, it is not a direct impact, but occurs through access to food, thus, at least theoretically, other forms to provide food else than being in a hazardous job should have the same effect.

### Conclusion

The studies, although often anecdotal, reveal major health problems related to child labour. In some countries, like the US, child workers' fatal and non-fatal injuries are well studied. In developing countries, the studies mainly confirm the health effects due to different activities in different sectors, already known from adults. Additionally, the studies raise a controversy about the impact of child labour on nutrition.

There is a clear need to deepen our knowledge and understanding on long-term health effects from child labour both in developed and developing countries. Well designed studies are necessary to identify the different health outcomes derived from work.

We do not have to wait for more knowledge to come to action. There are some sectors, like mining and prostitution, and activities like work with dangerous chemicals and machines where there is enough information to move to the immediate elimination of child labour.

### Lessons learned

- Agriculture and construction are high-risk occupations for fatal injuries in developed countries.
- Agriculture and retail trade are high-risk occupations for non-fatal injuries in developed countries.
- Mining is the occupation with the highest health problems and burden due to accidents and intoxication in developing countries.
- Chemical exposure is a problem in agriculture, manufacturing and retail trade both in developed and developing countries and children should not be working in tasks that involve these kinds of exposure.
- Domestic services expose children to long hours of work and can be related to a high-risk of injuries, musculoskeletal problems, physical and sexual abuse.
- The unconditional forms of child labour, child prostitution and working street children have a high-risk profile and should be immediately eradicated.
- Information on the association between adult work and health is very useful to define high-risk occupations for children.
- Studies should have:

  - a comparison group that includes non-workers and workers in other occupations to avoid (child) work,

  - an appropriate sample size to provide satisfactory statistical power to evaluate the health effects of child labour, and

  - should include, besides workers' history of physical complaints, a standardised questionnaire and objective measures to characterize exposures and outcomes.

### Gaps in our Knowledge

- Scientific information on long-term health effects of child labour in developed and developing countries is scarce.
- Information on occupational accidents and injuries is lacking in developing countries.
- There is a need to evaluate:

  - the levels of risks existent in different tasks and sectors,

  - the impact of child labour on health of different age groups, and

  - the impact of child labour on health of workers with different tenure of work.
- It is important to take into account that children often work part-time and, hence, the unit of measure should be a full-time equivalent (FTE) worker.
- It is important to develop studies to understand the impact of child labour on child nutrition and psychological development.

# Collaborative Young Worker Eye Safety Project - Bangladesh

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The Bangladesh Health and Injury Survey- Report on Children (January 2005) found that during 2003 over 19 000 children were injured by industrial plant and machines. This represented almost 50 children a day injured, three of them injured severely enough to be permanently disabled, and more than one killed each day.

This article sets out to describe a unique and collaborative health and safety project between Noarlunga Towards a Safe Community (NTSC), South Australia, a member of the WHO Safe Communities Network and Sherpur Safe Community (SSC), Bangladesh, currently working towards designation as a WHO Safe Communities member.

Sherpur is a rural village area in the north-east of Bangladesh where many people survive with the basic tools for small scale metal fabrication, welding and woodworking. It is a place of poverty. Workplace injury through lack of personal protective equipment (PPE) and unsafe safety standards can cast whole families into hunger and despair.

Many employed here are the poorest of Bangladeshi workers. Those injured often cannot afford to access basic medical treatment and so breadwinners affected by occupational injury can become quickly unemployable. In this instance there is no social welfare to safeguard themselves or their family; young people often, through necessity, leave school to enter the workforce to provide for their families.

Life is far from perfect for these young people, especially those from poorer families. There are currently many juveniles in Sherpur working in metal welding shops - working still with little or no PPE and serious eye injuries are commonplace.

The reasons they work, as well as the kinds of work they engage in, are varied and complex. For many in the developed world the notion of young people working is hazardous situations is abhorrent and difficult, but the present socio-economic circumstances in Bangladesh dictate that they must. Surprisingly, even though the working conditions are grim the young workers are wonderfully resilient, reflecting hope for a better future.

Many Bangladeshi metal and welding shops are unsafe because of the lack of personal protective equipment and poor safe systems of work. Safety education for both employers and employees and the access to the correct PPE can make a workplace safer and healthier and greatly reduce the risk of personal injury, particularly for inexperienced workers.

This Young Worker Eye Safety project does not condone or in any way support child labour. It does seek, however, to address reality and aims to prevent young people from damaging and losing their sight through unsafe work practices.

Noarlunga Towards A Safe Community is located in the southern suburbs of Adelaide, South Australia. As a member of the WHO Safe Communities Network, NTSC strives to address all forms of injury through the use of a cooperative agency approach. In 1996 NTSC received official membership status of the World Health Organisation's Safe Communities Network and was re-accredited in 2003.

Noarlunga and Sherpur share a passionate commitment to the effectiveness of practical community based health and injury prevention programs to safeguard poorer and disadvantaged communities.

In February 2000, as part of my work with NHS, I presented a workplace safety paper at the WHO 9th International Conference on Safe Communities held in Dhaka, Bangladesh. During my visit I made contact with Dr Harun Or Rashid, Field Coordinator for the Sherpur Safe Communities program and Dr Fazlur Rahman, Associate Professor, Department of Epidemiology at the ICMH.

In 2001, Dr Harun was sponsored by NHS to visit Australia and in particular the workplace health and safety program at Noarlunga. The visit was another important stage in building the collaborative friendship and working relationship between our two organisations and communities. During this visit the real need for an eye injury prevention project in Sherpur was identified and preliminary discussions explored strategies to address this important workplace health and safety issue.

During 2002/2004 applications for support for the project were made to local South Australian businesses. They generously agreed to assist with the cost of the project by covering airfares, donating many thousands of dollars of new and used eye safety glasses and covering the cost of freighting the glasses to Bangladesh.

Sherpur Safe Community covered all travel and accommodation expenses in Bangladesh, while NHS covered my salary during the visits to conduct the project.

However, whilst implementing the 2002 and 2004 eye safety projects in Sherpur, the real needs of younger metal workers became apparent. I was staggered by the incredible numbers of young labourers working in the metal businesses. The eye safety equipment we previously provided was far too large for their small faces and the training packages developed were just not appropriate for adolescents with little or no literacy.

In the light of this very real concern for young worker safety, an application for support for the project was made to the Australian Government's Direct Aid Program (DAP). Through AusAid program funding the High Commission in Dhaka generously agreed to assist with project costs.

The goal of the Young Worker Eye Safety Project was that SSC and NTSC work together in further developing and implementing the innovative eye injury prevention program to include the many young labourers employed in small metal businesses located in Sherpur, Bangladesh.

This joint project involved the development of culturally appropriate educational safety information for workers and their employers, eye safety signage for young workers with little or no literacy, provision of urgently needed, correctly fitting eye safety equipment for adolescent metal workers and, most importantly, further practical train-the-trainer programs for local health and safety coordinators working in the field, with a specific focus on young workers.

Prior to the start of the project an extensive young worker eye injury and workplace labour audit was conducted through small businesses in the Sherpur region by SSC fieldworkers. Then, after several months of intensive joint planning, the Australian members of the project team flew to Dhaka in February 2005.

Over 220 pairs of DAP funded safety glasses and oxy-welding goggles had already been purchased and posted to Bangladesh. Also, some 200 new adult safety glasses, donated by Australian safety supplier Uvex and other local small South Australian businesses, had been sent to Bangladesh for distribution in the eye safety project.

An overhead transparency eye safety training kit had been produced to assist local health workers and field coordinators to specifically educate young workers and their employers. The preliminary design of this resource had been facilitated in Australia; it was now essential that a Bangla version of the resource be created for use within the training workshops.

Local employers were initially hesitant to send their adolescent workers to the eye workshops for fear of breaching national labour law requirements. Bangladeshi law seeks to prevent children under the age of 14 being employed in hazardous workplaces. With the physical demands of the metal and welding shops most of the younger workers were around this age range.

Therefore, the first few days of the project were spent in warm conditions visiting small metal and wood shops in the local area encouraging and inviting employers to send their young employees to a series of eye safety training sessions, facilitated by Dr Harun.

At the workshops the project team showed young workers the correct way of ensuring their eye safety during hazardous welding, lathe, grinding and chipping work and appropriate eye safety glasses were distributed to participants. In this way enthusiastic young workers were instructed in injury prevention through the correct use of eye safety wear for welding, oxy-welding, machining, chipping and grinding.

A total of 13 eye safety workshops were held, with over 320 local employers and employees attending. It was pleasing to see many younger workers taking part in the workshops, particularly as a consignment of 220 special safety glasses, funded by the DAP, had been taken to Sherpur to fit their smaller faces.

The following outcomes were recorded from the Young Worker Eye Safety Project:

- An extensive young worker injury and workplace labour audit was conducted through small businesses in the Sherpur region by SSC fieldworkers.
- Consultation and project awareness-raising took place with community members, employers and employees to emphasise the importance of eye injury prevention strategies.
- An eye safety training kit to assist local health workers and field coordinators was developed to specifically educate young workers and their employers.
- Site visits were made to local metal businesses promoting the eye safety workshops, particularly to those businesses employing young workers.
- In total 13 interactive eye injury prevention workshops were implemented.
- Individual safety glasses and welding masks/goggles were dispensed to some 250 young workers and 70 adult metal workers in Sherpur Safe Community metal businesses.
- Culturally appropriate eye safety signage was placed in approximately 60 businesses employing young workers.
- Vital training was facilitated for Sherpur Safe Community health coordinators in workplace eye safety risk assessment, understanding the use of correct eye safety wear for younger workers involved in welding and grinding. This "train-the-trainer" model will provide local field coordinators with the necessary expertise in ongoing workplace eye safety and health promotion.
- Two members of the WHO Safe Communities Network and their local communities worked collaboratively to ensure young worker safety.

The outcomes from the Young Worker Eye Safety Project were broad ranging.

The use of a dedicated collaborative agency approach has led to genuine change in health and safety practices in many Sherpur workplaces. The success of the project indicates that long-term sustainable outcomes in workplace health and safety can be best achieved through intersectoral and collaborative action.

It is clear that programs which increase employer and employee health and well-being positively impact upon everyone. They are good for business, they are good for employees and, above all, they are good for families-particularly families in a developing country.

This visit to Bangladesh again provided many experiences. We will always remember visiting the many metal and wood businesses and the genuine friendship and shared purpose for young and adult workers attending the eye safety workshops.

Bangladesh is often portrayed as a hopelessly poor nation of helpless people. In reality they are a nation of dedicated people who have to work tremendously hard every day to make a living, support their families and improve their lives.

The true significance of the visit for our Australian team was in meeting people with a common interest and working with others towards a shared goal. Our fellow health and safety professionals and the Bangladeshi community members with whom we interacted felt genuinely indebted as we had again travelled from Australia for a third time to take part in a truly collaborative project.

In hindsight I am confident that our liaison will materialise as a lasting achievement. In talking about what the project meant to them, one of our Bangladeshi colleagues wrote the following;

> *"It was a good feeling being together. It was good for Sherpur to work together with you-we hope to do so again. Now even more of our poorer young workers are able to work safely taking care of their eyes. Your visit provided us with safety equipment and training but most of all you gave your friendship and the important thing for us, encouragement. We are so proud of our achievements together."*

Above all, these joint projects are an important milestone in building a collaborative, lasting liaison between our two countries. Such projects provide the opportunity for us, as citizens of our global community, to share and to learn from each other.

## GOHNET News

A new staff member in the Occupational Health Team at WHO Headquarters, Geneva: Dr Ivan Ivanov

Dr Ivan Dimov Ivanov is a medical doctor from Bulgaria. He specialised in occupational health in his native country and obtained a PhD in sociology of health and the environment from Michigan State University where he holds an appointment as adjunct assistant professor. Dr Ivanov has worked as an occupational physician in different district public health services and as a senior governmental expert for occupational health at the Ministry of Health of Bulgaria managing also an EU project on restructuring occupational health in the country. At the end of 2000 he joined the WHO Regional Office for Europe as Technical Officer in the Special Programme on Environment and Health where he was working on environmental health policies and since 2003 also on occupational health. In 2004 Dr Ivanov was appointed a manager of the newly established occupational health programme in EURO. As of 1st July 2005 he was transferred to the Occupational Health Team holding the position of Scientist.

A new staff member in the WHO European Regional Office: Ms Suvi Lehtinen who is replacing Dr Ivan Ivanov.

Ms Suvi Lehtinen is a national of Finland and is currently Head of the Office of Information and International Affairs of the Finnish Institute of Occupational Health, a globally renown organization and a leading WHO Collaborating Centre in the area of occupational health. She has been dealing with developing both the information activities and the international affairs of the Institute, including extensive international joint programmes, nation-wide information dissemination, and telematic networking. Ms Lehtinen has published extensively in the area of occupational health. She has been actively involved in the planning and implementation of the workplan of the WHO Collaborating Centres for Occupational Health in Europe and globally. In addition, Ms Lehtinen has experience in working with countries from Europe, Africa and Asia.

## The Occupational Health Team in Geneva, Switzerland

From left to right:

Coordinator: Carlos Corvalan <=> Editor: Evelyn Kortum <=> Co-Editor: Kati Bozsoki <=> OH Focal Point: Gerry Eijkemans <=> Scientist: Ivan Ivanov

# Planning Committee Meeting of the Global Network of the WHO Collaborating Centers in Occupational Health to Develop the 2006-2010 Workplan Witwatersrand University Medical School, Johannesburg, South Africa 16-17 September 2005

The meeting to develop the structure and content of the new 2006-2010 Workplan for the WHO Global Network of Collaborating Centres (CCs) in Occupational Health was hosted by the National Institute of Occupational Health. Delegates included the Network Advisory committee (WHO, NIOSH, NIWL, ICPS, FIOH) and Planning Committee (chairs of the 15 task forces of the 2001-2005 Workplan),

IOHA, ICOH and ILO. This short report outlines some conclusions from the meeting and the new structure of the Workplan. The complete report, which was prepared by Leslie Nickels, University of Illinois at Chicago Great Lakes Centers for Occupational and Environmental Safety and Health, can be found on our website (www.who.int/occupational_health/network/en/).

Based on experience gained during the current Workplan period (2001-2005) in terms of successes and failures, the meeting participants decided to change the current structure of the Global Workplan from 15 Task Forces to six Activity Areas (AA) for the new Workplan period 2006-2010.

Each of the six Activity Areas is anticipated to include multi-centre projects that advance the goal of the Activity Areas and that enhance collaboration between CCs. Each Activity Area has a volunteer Temporary Manager, Deputy(ies) and Advisor(s). The Activity Areas are fully described by the Temporary Managers in a separate document also to be found on our website.

### Activity Area 1: Global Situation Analysis

***Temporary Manager: Kaj Elgstrand (NIWL Sweden); Temporary Deputy Managers: Marisol Concha (ACHS Chile), David Rees (NIOH South Africa) and Frank Pot (TNO, The Netherlands); Advisor: P.K. Abeytunga (CCOHS Canada)***

- Influence of globalization and employment patterns on occupational health
- Design of actions to improve occupational health

### Activity Area 2: Evidence for action and national policies and action programmes

***Temporary Manager: Andrew Curran (HSL UK); Temporary Deputy Manager: Marco Maroni (ICPS Italy); Advisor: Kari Kurppa (FIOH Finland)***

- National OHS Profiles
- Developing indicators for occupational health
- Surveillance
- Research
- Regional and national plans and policies and best practices
- Moving knowledge into action

### Activity Area 3: Practical approaches to identify and reduce occupational risks

***Temporary Manager: Stavroula Leka (U. Nottingham UK); Temporary Deputy Manager: Hans Thore Smedbold (IOHA); Temporary Silica Toolkit Deputy Manager: Rick Niemeier (NIOSH USA); Advisor: David Zalk (IOHA)***

Improve working conditions through the development and implementation of simplified risk reduction tools and methods.

Global Projects: Toolkit development and implementation

- International Chemical Control Toolkit
- Additional Chemical Toolkits (including asbestos and others to be determined)
- Silica Control Toolkit
- Physical (noise, vibration, heat/cold stress)
- Ergonomics
- Psychosocial
- Safety
- Economic appraisal
- Biological (including HIV, SARS, bird flu, etc)
- Sectoral (Health care workers, Construction, Agriculture, Mining)

### Activity Area 4: Education, Training, and Technical Materials

***Temporary Manager: Leslie Nickels (U. Illinois USA); Temporary Deputy Manager: Mohammed Jeebhay (U. Cape Town South Africa); Advisor: Tom Robins (U. Michigan USA)***

- OHS professional degree programmes
- OHS training courses at all levels
- E-learning, electronic and print materials, CD-ROMs
- Booklets, brochures, fact sheets, and technical materials
- Global Electronic Library of Training Materials

### Activity Area 5: Development and expansion of Occupational Health Services

***Temporary Manager: Timo Leino (FIOH Finland); Temporary Deputy Manager: Mary Ross (NIOH South Africa)***

- Occupational health for vulnerable groups (informal economy, children, migrants)
- Occupational health for high risk groups
- Delivery mechanisms for small/medium size enterprises and the informal economy
- Expansion and access

## Activity Area 6: Communication and Networking

***Temporary Manager: Claudina Nogueira (NIOH South Africa); Temporary Deputy Managers: Max Lum (NIOSH USA), PK Abeytunga (CCOHS Canada); Advisor: Alberto Zucconi (IACP Italy)***

- Resource mobilization (also the responsibility of each Activity Area)
- Marketing
- Networking
- Evaluation
- Sharing information (WHO/ILO Global Portal, Electronic and print media)

## Criteria for Projects for the 2006-2010 Workplan

The meeting participants agreed that all projects must meet five criteria. They need to

1. fit into one of the 6 Activity Areas,
2. collaborate with CCs in other countries,
3. address an occupational health issue of known or anticipated regional or global importance,
4. clearly state benefits of project and beneficiaries and
5. identify the scope of the impact of the project (global-regional-multi-country-national*).

** Projects that have benefit only for the single country will not be accepted, except in special circumstances, following consultation with the WHO Secretariat*

## Terms of Reference and Time Frames

The need for commitment of time was recognised between September 2005 and June 2006 to ensure that a fully developed proposal is brought for the Global Network Meeting for final decisions to Stresa, Italy in June 2006. Terms of Reference and timeframes were developed for the Temporary Managers of each Activity Area and Temporary Deputy Managers, as well as for the Permanent Managers and Deputies.

## Activity Area Temporary Arrangements

***AA Managers:*** time commitment of 25% between September 2005 and June 2006

***AA Deputy Managers:*** 10% - 25% time for same time period

***AA Advisors:*** no required % time but will consult

***Terms of Reference:***

- "Get the agenda up and running" for Stresa for the CC Meeting
- Prepare a description of the Activity Area for distribution in November 2006 to all CCs, ILO, ICOH, IOHA and IEA
- Develop an Activity Area Description and Executive Summary (a strategic plan, including goal, content, possible multi-Centre projects, indicators of success, and resources)
- Review responses received by January 2006, and fully develop Activity Area description and content by mid-March 2006
- Ensure that projects meet criteria for inclusion
- Contact CC Directors, ILO, NGOs as appropriate
- Promote geographical distribution in multi-Centre projects
- Suggest names for possible permanent Manager/Deputy Managers

## Activity Area Permanent Arrangements

***AA Managers:*** time commitment of 25% between June 2006 and 2010

***AA Deputy Managers:*** 10%-25% for same time period to assist Managers

***Advisors:*** no required % time but will consult

***Qualities of Managers:***

- International experience; Expertise in content of Activity Area
- Good organisational skills
- Involved in project(s) in Activity Area

***Terms of Reference***

- Program planning
- Promote collaboration
- Personal contact with Project Leaders and WHO
- Motivate CCs to put in projects and implement projects
- Review projects
- Monitor projects and report to WHO
- Keep Dynamic Activity Area plan updated
- Facilitate sharing of solutions with other countries
- Coordinate with other Activity Areas
- Teambuilding
- Program evaluation

***Appointment***

Requires approval of CC Director and confirmation by the WHO Secretariat and the Advisory Committee

***Challenges***

Challenges discussed for the development and implementation of the new Workplan include optimizing resources, bringing the work of the CC Network in line with the WHO 2007 Global Plan of Action, raising the profile of occupational health through strategic positioning and partnerships, and continuing the excellent coordination, level of enthusiasm and commitment of all to improve the health of workers.

***ICOH Meeting June 2006***

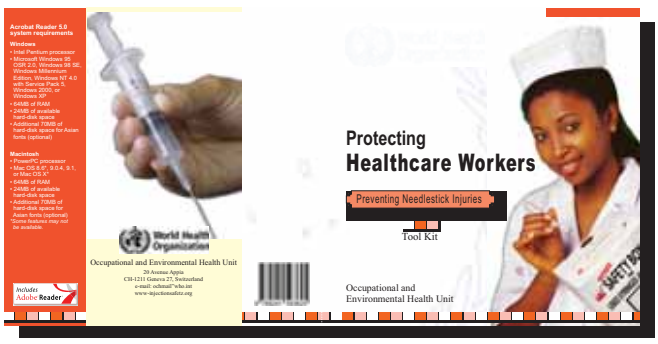
The conference planners expect 2000-3000 delegates. WHO will have a Global Network of Collaborating Centres Meeting on 8-9 June 2006 in Stresa, Italy. While there will not be a fee for attending the CC meeting, participants are responsible for their own accommodations. Professor Marco Maroni, Director of the International Centre for Pesticide Safety, Italy (ICPS), encouraged delegates to make their hotel reservations as soon as possible. The ICPS will be the secretariat for the CC meeting. About 150 participants from CCs are expected to attend. The ICOH meeting will be held in Milan from 11-14 June 2006. The CCs will have an opportunity to present information about their work at the ICOH meeting. Abstracts were due by 15 October 2005.

## Dates to note in your calendar:

***Collaborating Centre Meeting 8-9 June 2006 and ICOH Meeting, 11-14 June 2006 to be held in Stresa, Italy***

Report summarized by the Editor

Now available on: http://www.who.int/entity/occupational_health/publications/toolkit2005/en/index.html



## GOHNET Newsletter - Contributors' Information

### General

- GOHNET is a vehicle for information distribution and communication for all who are involved, active and interested in the subject areas of occupational health.
- The Editor reserves the right to edit all copy published.
- Contributors of all material offered for publication are requested to provide full names, titles, Programmes or Departments, Institute names, and e-mail addresses.

### Why write for GOHNET?

All experts have a professional responsibility to disseminate their views and knowledge. The Network of occupational health experts is constantly growing, and the Newsletter can therefore help you to reach a large audience in the occupational health community. This can help you to make new contacts, exchange views and expertise.

### What kinds of article do we publish in GOHNET?

Our diverse audience means that articles should be not only informative but also engaging and accessible for the non-specialist. We do not accept articles based on data that has not been accepted for publication following peer review. Such articles are more appropriate for submission to a journal.

Articles may provide a broad overview of a particular area; discuss theory; add a critical commentary on recent articles within a GOHNET Newsletter; or debate applied, practical and professional issues.

You can view examples of issued Newsletters, which are available at http://www.who.int/occupational_health/publications/newsletter.

### How should I go about writing my article?

Articles should be written as for an intelligent, educated but non-specialist audience, as the majority of readers will not necessarily be familiar with the topic of any individual article. Articles need to be written in clear, non-technical language, and aim to engage the interest of the membership at large.

Sexist, racist and other discriminatory or devaluing language should be avoided.

Articles can be of any length from 800 up to a maximum of 2000 words (excluding references), double spaced, with complete references and a precise wordcount (excluding references). Relevant high- quality scanned image materials is also welcome.

### How do I submit my work?

Send your article as an attachment to ochmail@who.int.

### Counterpoint articles

If you have a view on an article we have published, your best route is an e-mail or a letter to the Editor. If you wish to add a substantial amount of evidence on a significantly different angle, we welcome commentary pieces of up to 1000 words, submitted within two months of the original piece.

### Conference or workshop reports

Brief reports on conferences or workshops of interest to a wider audience (any length up to 700 words) should be sent, within a month of the event, to the Editor. Focus on what is new and of general interest, rather than including a lot of background information about the conference.

### Reference style

Below is an example of the reference style to be used:

1. Herbert R, Gerr F, Dropkin J. Clinical Evaluation and Management of Work-Related Carpal Tunnel Syndrome. Am J Ind Med 2000 37:62.
2. Pelmear PL. Hand-Arm Vibration Syndrome. An Overview. In: Hand Arm Vibration Syndrome. HHSC Handbook No. 24. 1999. P 2.
3. Piligian G, Herbert R, Hearns M, Dropkin J, Lansbergis P, Cherniak M. Evaluation and Management of Chronic Work-Related Musculoskeletal Disorders of the Distal Upper Extremity. Am J Ind Med 2000 37:75.

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- ☐ Dust
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- ☐ Elimination of Silicosis
- ☐ Ergonomics
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- ☐ Global Burden of Disease
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- ☐ Musculo-Skeletal disorders
- ☐ Occupational Health Series
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**DO YOU HAVE TRAINING ACTIVITIES? IF SO, IN WHICH AREA(S) OF EXPERTISE? PLEASE DESCRIBE:**

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