

The Global Occupational Health Network



ISSUE No. 8

WINTER 2005

GOHNET NEWSLETTER

Dear Reader,

This GOHNET issue is very fascinating as on the one hand it touches on a large group of workers which is very vulnerable to contract occupational diseases; and on the other hand, many of us are neither aware of the concrete dangers that health care workers face every day nor how to band these.

Health care workers are vital for the functioning of the health care system, and for the implementation of occupational health services. If we do not protect our health care workers, it will not be possible to aspire strengthening occupational health.

In many cases, health care workers are leaving the country because of better economic perspectives in other parts of the world. However, this is also intimately related to the lack of protection and the poor working conditions for health care workers. By improving working conditions and health and safety we can make a difference.

This issue gives an excellent insight from global and more specific perspectives. It refers to useful websites where you can obtain further information and of course you can always contact the authors for specific questions.

The reference section has become so long that we had to make it available on our website (www.who.int/occupational_health/publications/newsletter/en/).

We hope you enjoy this issue as much as we did while editing it, and can appreciate the hazards health care workers are exposed to in their everyday work and what can be done about it.

We wish you an enjoyable reading.

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The Effects of Globalization on Health Care Work and the Health Care Worker

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Emerging Trends

The face of healthcare is rapidly changing. And as in so many other dimension of 21st century life, driving this may be forces that operate at a global level:

- When nurses in Toronto died as a result of caring for a SARS-infected patient recently arrived from China, we were dramatically alerted to how modern travel trends can affect workplace risk itself.
- When health care workers have acquired HIV/AIDS in South Africa as a result of needle stick injuries, and then had their access to medications restricted by prohibitive expense of drugs for their treatment, we see how global rules restricting such access can be a matter of life and death.
- When doctors and nurses are recruited from low- and middle-income countries to high-income countries, we have been left to consider whether the capacity of remaining workers to treat the world's burden of disease is being further squeezed.
- And when we consider how restrictive financial measures have squeezed budgets of health care facilities, triggered public versus private service competition and stimulated the downsizing of workforces and the restructuring of work itself in workplaces around the world, we cannot help but consider whether this is coincidence or a pattern linked to similar global pressures (1).

On a broad scale, globalization has been recognized to be creating challenges for health systems, policies and practitioners (2). However, far less attention has been paid to the workplace circumstances of workers who provide care. A dramatic increase in health technologies has propelled new methods for diagnosis and treatment, and while these new methods and services provide opportunities for substantial improvements, they are often prohibitively expensive. And the increasing number of elderly in many countries is further driving up costs to the system (3).

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This article explores what we can learn from how such forces have produced impacts in other economic sectors, and then considers some specific trends that may be underway within the health care sector itself. In doing so, it will reflect on whether the potential that globalization has to offer is being harnessed and potential negative effects mitigated, a concern that has received considerable global attention itself (4).

What is Globalization?

Globalization has been appropriately described as a “process of closer interaction of human activities across a range of spheres including economic, political, social and cultural... [and] occurring along three dimensions: spatial, temporal and cognitive” (5). With barriers of time and space reduced, and communication and transportation facilitated, previous restrictions (and any associated benefits) have become open for question, particularly by powerful interests who see a potential for benefit. In this context, there has been an exponential increase in global linkages over the last forty years, within economic, technological and cultural domains, alongside similar expansion of trade, finance, production and a dense web of international treaties and institutions (6, 7).

Resulting changes in global economic organization and associated macroeconomic policies have been observed to be a source of rising global inequalities (8). In strictly economic terms, the past 20 years of increased global market integration has in fact disproportionately benefited the world’s wealthiest nations, reversing the trend of the previous two decades (1960-1980) when economic growth in poor countries outpaced that in rich ones (9, 10). Many poor countries and international non-governmental organizations furthermore complain that the rules of contemporary globalization are being crafted to protect and enhance the wealth of already rich nations and private interests at the expense of the rest of the world.

Globalization and Health

As our knowledge of non-medical health determinants expands and deepens to more systematically assess the health impacts of workplaces as well as other dimensions of people’s lives, it is a short leap to consider how these sets of determinants are themselves increasingly being subjected to “upstream” pressures of economic globalization (11). The development of new technologies for example can alter the strategic importance of labor within health service provision systems. The export of new health technologies can improve disease diagnosis and treatment. But the high costs of new technologies, sustained by extended patent protection under the Agreement on Trade-Related Intellectual Property Rights (TRIPS), and co-existing with the collapse of public health and rise in private health systems in many poor and middle-income countries consequent to structural adjustment programs, means that the beneficiaries are likely to be restricted to those who can afford to purchase access. Hence, providing low cost anti-retroviral therapy drugs was strongly resisted by multinational pharmaceutical companies and their allied governments in the name of the need to reward intellectual property - ironically by restricting competition in the production of the medicines in question.

The global rise in rates of obesity, diabetes, heart disease and cancer is linked to increased poor world consumption of unhealthy processed foods and tobacco products (12), themselves heavily promoted by global interests. Global trade regimes have further served to facilitate such increased “market penetration” by forcing low and middle income country tariff reductions on processed food imports often originating from rich country producers. So the benefits of increased trade and economic activity have been nuanced by the terms of how this growth has been conducted and the benefits distributed.

Six Unique Features of Contemporary Economic Globalization

1. **Global governance organizations** Contemporary globalization has been accompanied by the rise of new international organizations with wide cross-national jurisdiction and powers to set out rules on a supra-national basis such as through the General Agreement on Tariffs and Trade (GATT) (13-15). The focus of trade regulation has shifted to the removal of non-tariff trade barriers, meaning those domestic government policies and regulations that might inhibit the cross border flow of goods, services and capital.

2. **Asymmetrical growth** The world economy revolves around 3 supra-regional economies located in Western Europe, East Asia, and North America. The investment and growth patterns of trade within and between the triad is controlled by multi-national corporations (MNCs), which have, with some exceptions, produced regional rather than truly global patterns of trade (16).
3. **Global capital flows** The absolute amounts and speed with which capital flows between nations has increased. The present volume of capital traded daily is approximately USD 1.5 trillion, a sum far exceeding the ability of any one state, or a bloc of states acting together, to regulate. Rapid inflows of speculative finance lead to rapid outflows, creating currency crises with often devastating economic, social and health consequences for people in affected countries. In each affected country, the result has been increased poverty and inequality, and decreased health and social spending (17).
4. **Foreign direct investment** Foreign direct investment (FDI) and trade in services both currently represent significantly smaller values and volume than the trade in goods, but their rapid rate of growth, their dependence on “high technology”, and their growing importance in the context of international trade agreements means that those nations and corporations best positioned to capitalize on these will be the new “winners”.
5. **Weakened state capacities and debt** The IMF and World Bank have introduced and implemented structural adjustment policies that include reduced subsidies for basic items of consumption, the reduction or elimination of tariffs and controls on capital flows, privatization of state-owned productive assets, currency devaluations to increase the competitiveness of exports, and domestic austerity measures such as reduced government spending on education and health and the introduction of cost recovery through user fees (18). These policies have since been associated with many negative health and social outcomes (19), as well as increased inequalities and eroded domestic labor market institutions (20). Moreover, they literally condemned the majority of poor nations to a ‘structural’ future of heavy indebtedness to rich ones (21, 22).
6. **Brain drain** Immigration policies in developed nations have increasingly favored skilled workers or entrepreneurs with capital as permanent immigrants. The result is a brain drain on developing countries - improvement to incomes and working conditions is necessary to improve the ability to train and retain health professionals in developing countries. As economic globalization has extended its influence, its proponents have sought new frontiers for expansion. The provision of services, including health services, has been explicitly put on this agenda in the past decade.

Health Systems and the General Agreement on Trade Services (GATS)

While earlier forms of economic globalization concentrated on export of capital and trade in goods, there has been a growing emphasis on opening services to global rules and reducing or eliminating government subsidies that had been in place to ensure that services remained affordable and accessible. The General Agreement on Trade in Services (GATS), adopted in 1994, provides the central framework for pursuing this and is the first trade agreement to cover investment in services such as health care, education, tourism, banking and energy.

Health services liberalization, proponents claim can lead to new private resources to support public systems, introduce new techniques to health professionals in developing countries, provide such professionals with advanced training and credentials, and introduce new and more efficient management techniques (25). The export of health professionals from poor to rich countries is argued to be an important source of foreign currency to the exporting nation, through the remittances sent home to family members.

Private US health care providers regard GATS as the main vehicle for gaining market access in countries where public funding and provision currently predominate (26). Globally, roughly 30% of all economic activity lies in government (publicly) provided services. Since most of these services are essential, meaning there is a guaranteed market for

them at least amongst those able to privately pay, it is easy to understand why private foreign investors are keen to open up this market to profit-making ventures.

However, there are powerful counterarguments. Indeed, a key concern is that GATS will lead to increased privatization of such essential public services as health care, education and water/sanitation, with private resources. Private investments in health services concentrate in services for the affluent that can afford to pay for them (27), undermining support for universal, cross-subsidized public provision of health services. Liberalization in the movement of health professionals can worsen the already critical “brain drain” from under-serviced poor countries to wealthier nations; the “temporary movement” of such persons can easily become permanent (28).

There is nothing preventing countries from trading in health services in any of these modes without making any commitments under the GATS agreement. The only effect of such commitments is to make it extremely difficult for countries to change their minds in the future. Once a service sector has been committed under GATS, there is no cost-free way of reversing it (29). The GATS agreement offers an exception for “a [government] service which is supplied neither on a commercial basis, nor in competition with one or more service suppliers” (30). This is often cited as evidence that concern over privatization is misplaced. This clause, however, may collapse under an eventual challenge, since most countries allow some commercial or competitive provision of virtually all public services (26, 31).

Conclusions

It is hard to predict how these global trends might affect health care workers, in rich or poor nations. The impact of the GATS agreement is still only speculative. Generally, one can expect a further stratification of wage and working conditions favoring highly skilled professionals in private systems (vs. those remaining in eroding public systems), and a widening gap between skilled health professionals (regardless of sector) and those responsible for facilities maintenance, cleaning or food preparation, services that are increasingly outsourced to private firms that pay lower wages and offer less employment security (32).

Globalization is a reality. It has been highly profitable to some, and has definitely produced many spin-off benefits in terms of knowledge transfer. However, it is at the same time having disastrous impacts for many. Health care workers are working harder than ever before. Stress, depression, and numerous other mental health problems are prevalent. Violence and increased risk of injuries continue to plague the health care workforce. To maintain the well-being not only of health care givers but of the world population whom they serve, the concerns must be considered. We must use whatever policy and other mechanisms we have available to ensure that these concerns are appropriately addressed, and take advantage of the mechanisms for the exchange of such information that the technological achievements of globalization provide.

Emerging Infections among Health Care Workers: the Severe Acute Respiratory Syndrome (SARS) Experience

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One thorn of experience is worth a whole wilderness of warning. James Russell Lowell (1819-1891)

Health care workers are exposed to a wide variety of infectious agents (for example) hepatitis viruses, HIV, TB) in the course of their work. On March 12, 2003, the World Health Organization issued a global health alert stating that a new, unrecognizable, flu-like disease may spread to health care workers. We now know this illness as Severe Acute Respiratory Syndrome or SARS. By August 2003, there were a cumulative total of 8,422 SARS cases and 916 deaths, reported from 29 countries. Over one fifth of the cases were health care workers, and this emerging

respiratory infection is probably the first global occupational disease to be described in this millennium. Several harsh lessons were learnt from the SARS outbreak and its impact on health care workers.

Lesson #1. Health care work can be hazardous to health

SARS is a grim reminder that health care work can be hazardous to health (1). Across the continents, health care workers comprised 21% of all SARS patients. However, in countries such as Canada and Singapore, the proportion was over 40%. In addition to doctors, nurses, laboratory and paramedical staff, health attendants and cleaners, the risk of contracting SARS extended to all those were working, or who were present in health care settings. Thus, the others at risk included traditional healers, fellow patients and visitors to health care establishments, and even transport workers who unknowingly ferried SARS patients to health care facilities.

Reports of attack rates among different categories of health care workers vary. In the early stages of the outbreak among health care workers, the overall attack rate of SARS among health care workers in the French Hospital in Hanoi was reported as 18%. The attack rates differed for the different categories of health care workers. The attack rate for doctors was 16%, among nurses the rate was 35%, and administrative staff had a rate of 2%. The category listed as “other staff with patient contact” experienced the highest attack rate of 53% (WHO 2003).

The increased rate in the non-doctor and non-nurse health care workers was again evident in a more recent report from Hong Kong (2). In a study of 339 SARS infected Health care workers in 16 Hospital Authority hospitals that managed SARS cases, the attack rate among nurses was 1.21 % (range 0 - 4.7%). Among medical/technical staff, the rate was 0.29 % (range 0 - 1.5 %) and among non-medical support staff (which included health care assistants and cleaners) the rate was 2.73% (range 0 - 13.3 %).

Proximity to a SARS patient was a strong risk factor for infection. This was demonstrated by the reported infection rates of medical students in the Prince of Wales Hospital. The students had attended a 40 minute bedside clinical assessment on either 6 or 7 March 2003 in a ward where a SARS patient was present. All three medical students who visited patients in beds adjacent to the index case of SARS were infected. In contrast, half of another group of 8 students who entered the same 10 bedded cubicle as the index case were infected, while another group of 8 students who had only entered the same ward were uninfected (3).

The variability of attack rates in these different reports could be due to several factors. Certain procedures, such as intubation and nebulization of SARS patients entail significant risk of infection, but even apparently low exposure situations can pose a risk (4). Other factors which could have explained the differences include the hospital setting, the degree of preventive measures in place among the health care workers, and the presence or absence of “super-spreaders” as well as undiagnosed cases of SARS.

Lesson #2. The impact of SARS extends beyond the infection

During the outbreak, Health care workers had to work under great stress and in constant fear of contracting the illness from undiagnosed cases of SARS. The requirement and discomfort of having to use personal protective equipment at all times, the need to monitor their temperature several times a day, working in physically separate teams and enforced restriction of movements within and between health care establishments caused inconvenience and distress.

A high degree of distress, as measured on the Impact of Event Scale, was experienced by 29 % - 35 % of hospital workers in Toronto (5). There were several contributory factors to the distress, such as contextual factors (e.g. being a nurse, having contact with SARS patients, having children); contributing attitudinal factors and processes (such as experiencing job stress, perceiving stigmatization, coping by avoiding crowds and colleagues, feeling scrutinized); and pre-existing trait factors (such as attachment insecurity).

In a study of 10,511 health care workers in nine health care settings in Singapore during the SARS outbreak, 56% reported feeling “more stressed at work”, 53% felt “an increase in workload”, 54% had to

perform work that they “normally do not do”, and 36% had to work overtime (6). Most of the respondents (87%) agreed that “people close to me are worried for my health”, and 69% felt that “people close to me are worried they might get infected through me”. In addition, there was also fear and stigmatization of health care workers and their family members from the public, because of their occupation. For instance, in Singapore, 49% of the surveyed health care workers thought that “people avoid me because of my job”, while 31% felt that “people avoid my family members because of my job”.

Lesson #3. SARS among Health care workers is preventable

SARS has a basic reproduction rate (R_0) of approximately 3, and is spread to health care workers mainly by direct mucous membrane contact with infectious respiratory droplets. The principles of early detection and isolation of SARS cases and quarantine of exposed members of the public are effective in its prevention and control.

For health care workers, wearing of gloves, gowns, eye protection, N95 masks, practice of good personal hygiene and self-monitoring for symptoms (with early isolation when symptoms are detected) are preventive measures that appear to be effective. While there were initial problems in implementing these measures on a large scale, most health care workers in countries such as Singapore found the protocols practical and easy to comply with. However, such preventive measures are extremely difficult to sustain over prolonged periods.

In addition, an occupational health response is needed. For example, in Taiwan, industrial hygiene specialists were involved in assisting hospitals design and evaluate ventilation modifications for infection control, and developing guidelines for converting hospital rooms into SARS patient isolation rooms (7). Occupational health professionals also played a role in the assessment of health care facilities in other countries besides Taiwan. In Singapore, occupational health professionals were invited to perform audits in at least two hospitals in Singapore during the height of the crisis, followed by discussions with their top management. In addition to assessment of the industrial hygiene aspects, which included evaluation of the ventilation modifications needed for effective infection control, we noted that temperature and humidity were significant factors affecting the use of protective gear in a tropical country. The occupational health audits included site inspection and review of work processes of those areas where actual transmission of SARS had occurred and where triage of febrile patients was taking place. Other issues identified as requiring urgent attention were the provision of sufficient rest, shower and changing facilities for staff, monitoring of staff sickness absenteeism, and the proactive management of staff mental health. Occupational health physicians subsequently served on hospital SARS debrief committees that reviewed institutional shortcomings and recommended new measures in anticipation of future outbreaks. An occupational health service unit headed by a trained occupational physician has also been formed in one of the hospitals.

Lesson #4. Occupationally acquired infectious diseases will continue to pose challenges to Health care workers

Since August 2003, isolated SARS cases have re-appeared. There were three occupational accidents where laboratory researchers in Singapore, Taiwan and Beijing were infected with the SARS Co-V, and one instance of SARS among four persons (that was believed to have arisen from contact to animals and rodents) in Southern China.

The first recurrence of SARS after the worldwide epidemic was contained in July 2004 occurred as a laboratory accident in Singapore in September 2003. The patient was a 27-year-old postdoctoral student who spent 30 minutes at a laboratory working on West Nile virus. The laboratory also conducted research on SARS-CoV, and due to cross contamination, the student became infected and later tested positive for SARS Co-V infection (8). Other laboratory outbreaks of SARS occurred subsequently in Taiwan in December 2003 and in Beijing in April 2004 (Normile 2004). Unlike the two earlier incidents in Singapore and Taiwan, where only a single person was infected, the incident in Beijing was more serious. Two laboratory workers were infected, and the disease affected a total of nine persons, with one fatality.

A WHO advisory to world governments and research laboratories in December 2003 noted that a large pool of SARS viral specimens collected

from human cases were dispersed among laboratories in many countries for tests. These laboratories required biosafety standards to be enforced stringently to prevent accidents. The WHO further stated that “These laboratories currently represent the gravest threat for renewed SARS corona virus transmission through accidental exposure associated with breaches in laboratory biosafety.”

Among health care workers, having a high index of suspicion for atypical SARS cases or other emerging occupational infectious diseases will be a necessary part of clinical practice. Besides laboratory outbreaks, SARS infection can re-emerge from the original or new animal reservoirs, or through undetected transmission (which may exhibit a seasonal pattern) or persistent infection in humans. Health care workers should remain vigilant — it is a certainty that SARS (or another life-threatening occupational infection — perhaps avian influenza) will re-appear or emerge in the future.

Conclusion

The emergence of the SARS Co-V and the outbreak of SARS among health care workers have shown us that new occupational infections do occur among health care workers. While the SARS outbreak among Health care workers was successfully contained, it has provided us with painful but important lessons on the risk and management of occupationally acquired infectious diseases among health care workers.

It is clear that occupational health professionals have an important role in the prevention and management of such infections. We should be better prepared and more involved when faced with a similar scenario in future, as we can ill afford to make the same costly mistakes, and re-learn the bitter lessons that resulted in illness and deaths of our health care workers.

Past experience, if not forgotten, is a guide to the future. Chinese proverb

Workplace Health Promotion for Auxiliary Nurses

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Abstract

Auxiliary nurses compare favourable with other health providers in mortality and morbidity. Working in shifts with low pay level and exposed to ergonomic, chemical and biological and mechanical agents, auxiliary nurses and related employees are a priority group for workplace health promotion (WHP). A total of 204 auxiliary nurses in three hospitals in Finland, Spain and Costa Rica participated in the testing of a feasibility assessment instrument. Data were collected on behavioural and subjective health hazards and acceptability of WHP among auxiliaries (questionnaire) and on social context (interviews). Workdays were scheduled in two or three shifts, weekly hours varying from 38 (Finland) to 48 (Costa Rica). In Finland, qualifications concentrated on cleaning skills. In Spain and Costa Rica wider training was required. Unionization rate was high (95%) in Finland. Auxiliaries were favourable (69-83%) towards WHP. High hazard and acceptability rates were found for WHP programs on diet, overweight, physical activity, and in Spain, smoking.

Preventable workplace hazards included chemical and biological agents, accidents, radiation, and environmental tobacco smoke. Management, occupational health services, safety committees and trade unions were supportive. In Finland, programs on diet, weight control, physical activity, and Pap screening were indicated; in Spain, on smoking, physical activity, and diet; and in Costa Rica, on smoking, diet, physical activity, weight control, early detection, and safety promotion.

Introduction

Auxiliary nurses, nurses' aids, nursing assistants and attendants perform "auxiliary" tasks in hospitals, health centers and old peoples' homes. While nurses are involved with patients, auxiliary nurses and nursing assistants clean premises, clean and repair textiles and maintain treatment equipment. They may lift and move patients and occasionally participate in patient care. Auxiliaries' work is scheduled in two or three shifts. Occupational hazards include ergonomic deficiencies, accidents, shift work, infections, chemical agents, psychological strain, and occasional environmental tobacco smoke (1).

Excess mortality and morbidity in nursing occupations have been reported for diseases of the urinary system; chronic lung diseases; hypertension; ischemic heart disease; cirrhosis of the liver; diseases of the circulatory system; cancers of the digestive and genital organs, lung, breast, ovary and kidney; leukemia; accidents; suicides; and food, drug, and alcohol poisoning (2-5). The highest numbers of occupational diseases among Swedish auxiliaries were diagnosed for diseases from physical strain, particularly affecting the neck and shoulder; eczema from chemical exposures; infections; and diseases caused by social factors and poor organization of work (6).

Workplace health promotion (WHP) focuses on improvement of worker health on a group basis and reaches medium to large numbers of subjects, many of which may not be reached through other channels (7). WHP may target lifestyles, workplace hazards, early detection, and wider matters. The four steps of a WHP program are feasibility assessment, design, implementation, and evaluation. Feasibility assessment identifies prevalent hazards, assesses worker acceptance, and pre-evaluates the

expected support of the social context (8). Worker collectives and trade unions are powerful initiators and implementers of WHP programs (9,10). We report on the feasibility of WHP among auxiliary nurses in Finland, Spain and Costa Rica (11).

Subjects and methods

Subjects were 204 auxiliary nurses in three general hospitals in Finland in Spain, and in Costa Rica. In Finland, 91 auxiliaries (a 13% convenience sample; 80 women and 11 men) were enrolled; in Spain, 25 (9%; 24 women and 1 man); and in Costa Rica, 88 (85%; 60 women and 28 men). An anonymous, confidential 30-item Employee Questionnaire (11) on behavioral hazards (tobacco smoking, alcohol consumption, body weight and height, physical activity, last date of mammography and Papanicolau smear), subjective need to change habit, and acceptability of WHP was administered. Arbitrary cut points dichotomized behavioral data into hazard/no hazard. Subjective lifestyle hazards were readily dichotomized as need/no need. Workplace hazards were evaluated by Employee Questionnaire and expert interviews with checklists and open-ended questions. Probing of social context (management, occupational health services, trade union, shop steward, and academic institutions) was done with semi structured interviews (11).

Assessment of feasibility was done by local criteria as a rough consensus between employees, social context and the assessor, based on data on hazards, acceptability, and the social context (11).

Results

Average weekly working hours varied from 38 (Finland) to 48 (Costa Rica). Auxiliaries in Spain and Costa Rica worked in three shifts, those in Finland in two. Basic training required varied. In Finland, the qualifications concentrated on basic cleaning skills, while in Spain and Costa Rica, more general training was included. Possibilities for promotion were most meager in Finland. Unionization rate was 95% in Finland, 20% in Spain, and nil in Costa Rica (Table 1).

Table 1. Auxiliaries' employ characteristics.

	FINLAND	SPAIN	COSTA RICA
Tasks	Clean premises; make beds; textile, food and instrument supply	Patient hygiene, feeding, introduce service locations, instrument supply, do cures, get up and lay down patients, inject insulin and give medication in the supervision of nurses, measure life processes, occasional emotional support	Make beds, administer medication, do basic procedures, assist in procedures, e.g., placement of urine tube, enemas infusions etc.
Average working hours/week	38	40	48
Shift arrangements	2-shift: morning and afternoon	3-shift	3-shift
Basic training required	2-year basics of cleaning services	1-year course containing health concepts and vocabulary, biology, medical drawing and practices	High school + 9-months course
Possibilities for further training	None	Through 1-2 -year courses: health technology, assisting pathological anatomist, mentally disabled etc. Through shorter courses: pharmacy, geriatric or psychological auxiliaries	Continuous educational programs within hospital
Possibilities for promotion	None in contract	Some improvements in contract, professional promotion after further training	None
% trade union members	95	20	No trade union

The majority (69-83%) of the auxiliaries was favorable toward WHP. Spanish auxiliaries had a high smoking rate (56%) and a high subjective smoking hazard rate (44%); 71% of smokers were willing to consider WHP for reduction. Finnish figures were lower, and Costa Rican lowest. Alcohol hazards seemed rare. A substantial proportion with dietary hazards (behavioral 63%; subjective 58%) and a full (100%) motivation for dietary WHP were found in Costa Rica. Dietary interventions were popular also in Finland and Spain. Medium-to-high occurrence and high motivation for WHP were found for overweight, especially in Spain and Costa Rica. Substantial proportions (70-89%) of auxiliaries reported

need for increasing physical activity in all countries. Acceptability of physical activity enhancement by means of WHP was high in Finland and Costa Rica. Need for advice on protection from excessive solar radiation was high in Costa Rica and Spain. Need for mammography, based on time elapsed from last visit, was reported by 38% of eight respondents over 49 years of age, and need for Pap smears by 43% in Costa Rica.

Identified workplace hazards included detergents, disinfectants and microbes; drugs; radiation; environmental tobacco smoke; ergonomic

problems, stress and accidents. The most obvious chemical hazards were at least to a degree controlled.

Table 2. summarizes the initial attitudes of the social context toward WHP programs. No formal commitment was requested at this stage. Management was most interested in anti-smoking and dietary programs, predominantly with passive interventions, granting time to employees, and help cover expert costs of WHP. Occupational health services, safety

committees, trade unions and the shop steward were supportive (trade union did not exist in the Costa Rican hospital). In Finland, a well-equipped in-plant occupational health center with experience in prevention was available. In Costa Rica, health promotion authorities and a university-based research institute were motivated to support WHP programs. A national program for safety promotion in hospitals was indicated in Costa Rica.

Table 2. Reported occupational hazards from Employee questionnaire and expert assessments. ETS: Environmental Tobacco Smoke.

	Identified hazards	Ongoing preventive programs
Finland	Chemicals, dusts, vapors, detergents, biological agents	Individual and protective measures. HVB vaccination
Spain	ETS, chemicals, biological agents, radiation	Individual and protective measures. Nonsmoking areas.
Costa Rica	Radiation, ETS, chemicals, vapors, drugs, particulates accidents	Smoke free workplace

Discussion

The assessment method was rapid and indicated the obvious needs and motivations for WHP. The instrument has a certain degree of face validity, since it focuses on relatively simple matters targets the key actors. Anonymity of Employee Questionnaire probably increases validity. On the other hand, rapid pre-feasibility assessments remain fraught with uncertainties concerning program implementation, material resources, costs, process and impact evaluation, and sustainability. However, even though the feasibility assessment in this study excluded form and implementation of WHP, they emerged in interviews, discussions, and debriefings. These discussions will be continued during program design.

WHP depends on local circumstances and requires flexibility in subject matter and methods. Worker participation is a necessary element. Important ethical considerations are tied with WHP, related to gender, ethnic and cultural sensitivity, equity, self-determination, participation, contextuality, empowerment, transparency, autonomy, responsibility and sustainability.

New forms of WHP need to be sought in hospitals. Conventional health education is probably not the optimal way of maintaining interest (12). The culture of the hospital personnel and its social context determines its health consciousness, motivations and behaviors. Integral programs encompassing major sectors of life may be discussed with and among hospital personnel.

A point has been raised on whether WHP should address the social context itself rather than health behaviors and exposures that are embedded in and indeed determined by the context. Thus, for example, smoking may represent a low-cost stress reducer among populations under conditions of economic and environmental stress, and effective anti-smoking strategy would call for redefinitions in management strategies or in larger-scale social policy, with a view of adopting measures that would relieve these strains rather than restrict to changing the resulting behavior (13). Thus, interventions on the determinants of health hazards represent a shift in perspective for WHP and might be considered for auxiliaries.

The program Work and Health in Central America (SALTRA) will shortly assess feasibility of WHP in hospitals in Guatemala and Panama.

Acknowledgement

This study was supported by the former Europe Against Cancer at the former DG-V, European Union.

Use of Respiratory Protection among Health Care Workers and Emerging Infectious Diseases

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The world today is faced with new emerging infectious diseases. Outbreak of Severe Acute Respiratory Syndrome (SARS) in late 2002 resulted in many deaths globally, with most of the cases coming from Asia. Among the victims were health care workers. The recent bird flu outbreak is an important and potentially devastating infectious disease in which health care workers could also be affected.

Most of the preventive measures (viz. substitution, ban, local exhaust ventilation, enclosure, etc.) that are adopted in other workplace settings may not be applicable or effectively implemented for health care workers managing patients with infectious diseases. It is inevitable that health care workers will have to come in direct contact, patients in the course of managing the patient.

When we talk about prevention of occupational hazards, it is said that the use of personal protective equipment (PPE) should always be the last resort. However, for health care workers, PPE may be the first line of defense in addition to other preventive measures which may be adopted concurrently or later when the mode of transmission of the infectious disease becomes clearer.

Most health care workers are familiar with the use of paper masks, surgical masks, gowns, gloves, hair covers and shoe covers, as well as and personal hygiene like hand washing and aseptic procedures. While all these measures are relevant and important they may not be sufficient.

One of the common modes of transmission of infectious disease is through respiratory droplets or body discharges which in some cases can also be airborne. Health care workers need to understand that for some infectious diseases the conventional paper mask or surgical mask may not offer sufficient protection. Health care workers need to be educated on the different types of respirators and their different levels of protection. They also need to be taught the correct way to wear these different respirators!

Our Center did a three-country study during the period of May-July 2003 regarding the perception of SARS among health care workers. Overall, 10,236 (70% response), 2,792 (93% response) and 7,282 (73% response) valid questionnaires were returned to Singapore, China and Japan respectively. In detail, the responses were distributed as follows: Singapore: 873 doctors, 4,404 nurses, and 921 clerical staff; China: 859 doctors, 1,033 nurses, and 128 clerical staff; Japan: 1,282 doctors, 3,588 nurses, and 763 clerical staff.

One of the findings in this study is that quite a large percentage of doctors in Singapore, China and Japan agree or strongly agree that paper mask were adequate against protection of SARS. A much higher percentages of doctors agree or strongly agree that surgical mask were adequate against protection of SARS. These worrying trends were also observed among nurse and clerical staff in Singapore, China and Japan.

There is an urgent need to educate health care workers on the use of right respirators, the proper way to wear it and the necessary checks to ensure its protection. It is also important to ensure that what is being communicated is carried out by all levels of health care workers.

Preventing Needle Stick Injuries and Occupational Exposure to Bloodborne Pathogens

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Lisa Black, a registered nurse, was caring for a patient in the terminal stages of AIDS when she suffered a needle stick injury. She was in the process of irrigating intravenous (IV) infusion tubing that had become occluded with blood by inserting a needle into a rubber port on the patient's IV line. While attempting to aspirate the coagulating blood and then flush the IV line, the patient became startled and jerked, causing the needle to dislodge from the rubber port of the his IV line. The needle punctured the palm of her left hand. Nine months later, Lisa learned that she had become infected with the Human Immunodeficiency Virus (HIV) and in the months following also learned that she was also infected with Hepatitis C.

Hepatitis C (HCV) and Human Immunodeficiency Virus (HIV), the virus that causes AIDS are two of the most serious of the 20 bloodborne pathogens that health care workers are exposed to in their daily work caring for the world's health. Hepatitis B virus (HBV) is the most common bloodborne infection and the only one of the three serious viruses for which an immunization exists. Other infections transmittable through needle sticks include syphilis, malaria, and herpes (1, 2).

The health care workforce, 35 million people worldwide, represents 12% of the working population (3). Health care workers suffer from two million needle stick injuries per year resulting in infections with hepatitis B and C and HIV. The World Health Organization estimates the global burden of disease from occupational exposure to be 40% of the hepatitis B & C infections and 2.5 % of the HIV infections among health care workers as attributable to exposure at work (World Health Report, 2002 see figure 1.) (4). While 90 % of the occupational exposures occurs in the developing world, 90% of the reports of occupational infection occur in the US and Europe (5). As of June 2001, the CDC has reported 57 confirmed and 137 suspected cases of occupational HIV transmission in the United States (6). But estimates of up to 35 new cases of HIV and at least 1,000 cases of serious infection are transmitted annually to health care workers (7).

The projected two million needle stick injuries are probably a low estimate because of the lack of surveillance systems and underreporting of injuries. Research has shown 40-75% underreporting of needle stick injuries (8).

Data from injection safety surveys conducted by the WHO and others show on average: four needle stick injuries per worker per year in the African, Eastern Mediterranean and Asian populations (9). Seventy percent of the world's HIV population lives in sub-Saharan Africa but only 4% of worldwide occupational HIV infection is reported from this region (10).

Needle stick injuries are the most common source of occupational

exposure to blood and the primary cause of bloodborne infection to health care workers (11).

The two most common causes of needle stick injuries are two-handed recapping and the unsafe collection and disposal of sharps waste (12).

Some of the determinants of needle stick injuries include (13, 14) :

- Overuse of injections and unnecessary sharps
- Lack of supplies: disposable syringes, safer needle devices and sharps disposal containers
- Lack of access and failure to use sharps containers immediately after injection
- Inadequate or short staffing
- Recapping of needles after use
- Lack of engineering controls such as safer needle devices
- Passing instruments from hand to hand in the operating suite
- Lack of awareness of hazard and the lack of training

The risk of transmission of infection from an infected patient to a health care worker following a needle stick injury is:

- 3-10 % for Hepatitis B,
- 1 - 3% for Hepatitis C,
- 0.3% for HIV.

Factors that contribute to an increased risk of transmission of HIV include:

- a deep wound,
- visible blood on the device,
- a hollow-bore blood-filled needle,
- the device was used to access an artery or vein, and
- a high viral load status of the patient (16, 17).

Taken together, these factors can increase the risk of transmission of HIV to 5% from a contaminated sharp. In developing countries, the excessive handling of contaminated syringes increases the risk of occupational transmission (18).

Post exposure prophylactic medication has demonstrated a reduction in the risk of transmission of HIV following a needle stick injury by 80% in a case-control trial (19).

Prevention of needle stick injuries is the most effective way to prevent infection

Control measures to prevent needle stick injury following the traditional hierarchy of controls from most effective to least effective include (20).

- **Elimination of the hazard:** eliminate unnecessary injections and administer medications through another route, such as tablet, inhaler or transdermal patches. Eliminate needles from supplemental IV lines (IV needle less systems). Jet injectors may be substituted for syringes and needles.
- **Engineering controls:** examples include needles that retract, sheathe or blunt immediately after use.
- **Administrative controls:** policies aimed at limiting exposure to the hazard, such as examples include allocation of resources demonstrating a commitment to health care worker safety, a needle stick prevention committee, an exposure control plan that includes universal precautions, removing all unsafe devices and consistent training on the prevention of needle stick injuries.
- **Work practice controls:** examples include no re-capping, providing sharps containers (also known as safety boxes) at the site of every injection, placing them at eye-level and at arms reach, emptying sharps containers before they are full, and establishing the means for safe handling and disposing of sharps devices before beginning a procedure.
- **Personal protective equipment (PPE):** barriers and filters between the worker and the hazard. Examples include eye goggles, gloves, masks, and gowns.

Education, administrative and work practice controls have been shown to reduce up to 80% of needle stick injuries. Engineering controls can reduce over 90% of needle stick injuries. Lisa Black's injury and infection could have been prevented with the use of Intravenous (IV) needle less system or an automatically sheathing needle. A supplementary needle to irrigate the Intravenous (IV) line was an unnecessary hazard.

Global Trends in Prevention

The importance of health care worker health and safety has increased in the past decade along with the awareness that quality health care is dependent on a work environment safe for health care workers. In 2000, almost ten years after the Occupational Safety and Health Administration's Bloodborne Pathogens Standard was first promulgated, the United States Congress enacted the Needle Stick Safety and Prevention Act requiring the use of engineering controls, also known as safer needle devices to prevent injuries. In May 2003, the European Nurses Associations united behind a call for policy in the European Parliament ensuring access to safer needle devices and in 2004, the province of Saskatchewan in Canada became the first province in Canada to require safer needles. As a result of the President's Emergency Program for AIDS Relief (PEPFAR), injection safety projects in Africa are now procuring and using sheathed and retractable needles to protect health care workers.

WHO and ICN Joint Project to Protect Health Care Workers from Needle stick Injuries

In September 2003, the WHO and International Council of Nurses (ICN) began a pilot project in three countries including South African, Tanzania and Vietnam to prevent HIV and hepatitis infection from occupational exposure to bloodborne pathogens. Recognizing the need for integration between disciplines, WHO and ICN joined together with the national nurses' associations, occupational health professionals, and ministries of health to assess and address policy gaps, implement universal (or standard) precautions, educate workers and health systems managers, develop surveillance systems, immunize against hepatitis B and implement appropriate post-exposure follow-up including prophylactic medication.

The goal of the project is to reduce needle stick injuries and transmission of hepatitis and HIV to health care workers. Secondary process measures are to increase reporting of needle stick injuries, improve adequate follow-up of injured workers including post exposure prophylaxis (PEP), and to utilize the data regarding exposures for prevention.

The WHO Injection Safety Tool Kit assembled by the Safe Injection Global Network (SIGN) (see www.injectionsafety.org) will be utilized for initial assessment and as a programmatic resource. After one year, an evaluation of the pilot project will determine effectiveness of and need for wider dissemination of the tools and strategies beyond the pilot hospitals.

In October 2004, the southern Africa project partners met together with other organizations in southern Africa region. They worked on injection safety and infection prevention and control to plan for scaling up the project throughout the region and collaborating to ensure that the occupational health of health workers becomes a component in all work on infection control and injection safety.

Summary

Needle stick injuries and exposure to blood and body fluids are a serious risk to health care workers and a threat to quality patient care due to a reduction in the workforce. These injuries and resulting infections are largely preventable with the implementation of Hepatitis B immunization, Universal Precautions, post-exposure prophylaxis and control measures such as eliminating unneeded injections, safer needle devices, disposing of sharps into a sharps container immediately after use, and avoiding recapping of needles.

Attention to health care worker safety is long overdue and essential to the provision of quality health care.

The "Next-Study": Investigating Premature Departure from Nursing in the European Health Care Systems

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Introduction: The European Context

Nowadays, in almost all European Countries there is a big concern about the consequences that nursing shortage can produce on care delivery in the future. This is particularly true if we consider that the progressive ageing of the European population will further increase pressure on the health care services. While particularly adverse working conditions lead old nurses to leave their profession well before retirement age, there is not a sufficient number of new applicants to nursing courses to fulfil raising demands of nurses in health care institutions. Therefore, also in the light of the ageing process of the European workforce, it seems the main solution to lie in the retention of existing nursing staff: this objective can be reached by the promotion of workplace interventions aimed at maintaining good health standards among older nurses.

The nursing shortage is a worldwide phenomenon and led the WHO to adopt many resolutions on Strengthening Nursing and Midwifery, considering the crucial role that nurses play in health care delivery.

A solid background for supporting risk occupational categories such as nursing is given today, mainly based on the effort the EU put forth in identifying objectives and structures for the promotion of working life across Europe. The purpose of improving workers' health and their working and living conditions is since long time inspiring European policies in seeking high competitiveness in the global labour market.

Since 1975, the European Foundation for the Improvement of Living and Working conditions instituted by the European Council has been dealing with topics such as "organization and redesign of working tasks and workplaces" and "long-term advantages related to the implementation of adequate environmental conditions". Particular attention has been devoted to problems peculiar to certain workers' categories, such as women and aged people.

Following the EU directive no. 89/391/EEC, many countries introduced fundamental changes in legislation concerning workers' health and safety, such as employers' duty to respect potentialities, attitudes and task motivations of the workers.

The Maastricht Treaty (1993) opened the way for a common European strategy for public health, while the Amsterdam Treaty (1997) specified the role of the EU in defining a high-level policy on public health issue, included occupational quality.

Among social promotion programmes, The European Commission (1996-2000) set priorities such as work modernisation, realisation of healthy workplaces, quality of data collection, identification of new occupational risks, the training of equality and the fight against discrimination.

Within this context, the Joint Programme for Working Life Research in Europe (SALTSA) was instituted with the aim of identifying standard criteria to evaluate work-related pathologies in the EU and providing member states with a basis for the development of prevention programmes. Among the research activities supported by SALTSA, there is a project called "sustaining health and working ability of ageing workers, particularly in hospitals and health care institutions".

A SALTSA study group, c/o the Bergische Universität of Wuppertal (Germany), initiated in 1999 an original research to identify reasons related to nurses' premature departure from their job and to the unattractiveness of nursing among young people. The final objective of the research was to define countermeasures to sustain a process of healthy ageing among nursing staff and therefore guarantee a future both to the profession and to the health care delivery needed by the European countries.

Facing the nursing shortage in the European countries

Throughout Europe, health care systems are widely changing. In particular, a “seamless” transition from hospital to home-care is occurring, resulting in higher job demands for nurses. In the one hand, in hospitals, the increased amount of care to be provided for emergency and acute diseases will put much pressure on nurses in terms of higher work intensification and more specialized skills required. On the other hand, higher autonomy, the development of more differentiated skills related to patients’ care and a role shifting in the relationships with the other health care professional are requested of community nurses.

Within this context, nursing shortage, which affects almost all Western European countries, leads to a significant increase in workload for the nurses who remained at the workplace and to a consequent reduction in quality of care delivery. In Eastern countries, at present there is not a lack of nurses in the health care service owing to the high unemployment rate, but wages are very low and working conditions rather unfavourable.

European governments tried in different ways to restrain nursing shortage by improving attractiveness of nursing among young people or boosting retention of the older nurses. For example, Belgium started an age-related progressive reduction of working hours, while the United Kingdom proposed more flexible options for retirement, improved participation of older nurses in programmes of continuing professional development and instituted better occupational health services. In other countries, such as Italy and Germany, in the light of the general increase of retirement age, benefits have been proposed to nurses such as the opportunity to practice as free professional also within their institutions. In order to support recruitment of new nursing staff, profound reformations of the education system were put into practice, and some countries (Italy, United Kingdom, The Netherlands, Germany) promoted policies to boost recruitment of personnel from abroad. The increase of supply of training posts in nursing actuated in Italy, Norway and Germany, the reformation of quality and the diversification of education promoted in Belgium, Slovakia and Poland were aimed at attracting applicants to nursing courses and improving social image of the profession among young people. Despite all these attempts, in many European countries the number of applicants is decreasing and a raising proportion of training posts remain unoccupied.

The Nurses’ Early Exit Study (NEXT)

In 2001, the “Next-Study” (Nurses’ Early Exit Study), initially supported by SALTSA, was financed by the European Union (QLK6-CT-2001-00475). The “Next-Study”, co-ordinated by Hans-Martin Hasselhorn and Bernd Hans Müller at the University of Wuppertal (Germany), is a cross-cultural research investigating reasons, circumstances and consequences of premature departure from the nursing profession in Europe. A detailed overview about the “NEXT-Study” and first research results of the international NEXT research team can be found in Hasselhorn et al. [1] and on the NEXT website (www.next-study.net).

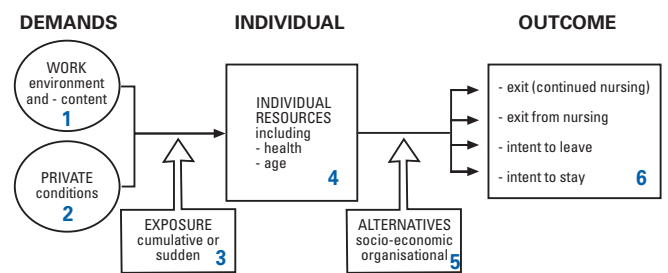
In detail, the objectives of “Next-Study” are to:

- describe and analyse the working conditions for nursing staff in large parts of Europe,
- identify the reasons underlying intention to leave among nursing staff,
- identify causes for premature departure from nursing (work-related, socio-structural and individual causes),
- identify risk groups for premature departure,
- study the impact that premature departure has on the individual and the institutions,
- define conditions associated with ‘healthy ageing’ in health care work,
- deliver the basis for targeted workplace health promotion in order to sustain the working ability of nurses in European countries.

The study began in 2002 and will run until June 2005. It is carried out simultaneously in Belgium, Finland, France, Germany, Great Britain, Italy, the Netherlands, Poland, Sweden and in Slovakia. Norway was added as “associated member”.

The “Next-Study” developed an original conceptual model to explain premature departure from nursing and shed light on the so-called push and pull factors (see Figure below).

Figure 1. NEXT model of departure from health care work



The model in Figure 1 hypothesized that the consideration of leaving the profession (6) depends on

- a) the demands of work (1) and private life (2)
- b) the pathway of exposure (3)
- c) the individual’s resources (4)
- d) possible alternatives (5), such as better job or pay, opportunities for education, disability pension, premature retirement or another job within the institution.

To assess reasons and possible consequences of premature departure from the nursing profession, the “Next-Study” is being performed following a longitudinal design. In each of the NEXT countries, different types of health care institutions (hospitals, long-term and homecare services) were selected according to their distribution in the national territory.

In the beginning, a baseline questionnaire covering working and private life, as well as future perspectives of the respondents, was sent out to all nursing staff in the participating institutions. In the following 12 months, all those who were approached at the first assessment and left their current health care institution, received an additional questionnaire, called the “leavers’ questionnaire”, which records the underlying reasons of departure. One year after they left the institution, the participants receive a “leavers’ follow-up” questionnaire which investigates effects and consequences of this step. The collection of this questionnaire is still ongoing. Twelve months after the baseline questionnaire, all participants who remained in their institution were approached with a final questionnaire exploring whether changes have occurred and consequences of staying in nursing.

Intent to leave the nursing profession in Europe

Out of a total of 77.000 nurses approached, about 40.000 filled in the baseline questionnaire.

The initial assessment of the NEXT-Study provides the opportunity to investigate questions related to the amount and the reasons of intention to leave nursing in Europe and to identify groups which are at higher risk for departure.

In the total European sample, more than half of the nurses never considered leaving the profession, while 15,6% considered it often. Italy, Germany and the UK had the highest rates of intent to leave nursing, while the proportion of nurses motivated to leave their profession was very low in the Netherlands and in Norway.

In almost all European countries participating in the “Next-Study”, male nurses thought about leaving nursing more often when compared to their female counterparts. In Europe, intent to leave increased from the first stages of career until the age of 30-40 years old and then decreased constantly. This can be partly explained by the fact, that on the one hand the young and well-educated nurses, depending on labour market opportunities, are more motivated to improve their personal development by shifting to different and better working positions, while, on the other hand, older nurses with good health are less inclined to leave a job in which they have reached high levels of experience.

Our results indicate that intention to leave the nursing profession is strongly influenced by numerous aspects of psychophysical institutional working conditions. High work demands, lack of autonomy, the difficulty to reconcile work with family commitments, poor quality of

leadership and bad relations in the workplace reduce nurses' work ability and job satisfaction, and increase burnout, fostering intention to leave nursing as a consequence.

NEXT results from the baseline questionnaire identify two groups of nursing staff according to the motivation of leaving the profession: a) the motivated leavers and b) the resigning leavers. On the one hand, the motivated leavers are young, have a high education level and strive for personal development. Situation of the job market can more or less provide opportunities to fulfil their future plans. On the other hand, the resigning leavers have poor health, low work ability and high burnout.

The cross-cultural nature of the "Next-Study" offers the possibility to compare nurses' working conditions across Europe and to identify examples of good practice in those countries where intention to leave nursing was found to be lower.

Owing to the cross-sectional nature of the reported results, the healthy worker effect may have led to an underestimation of the association between adverse working conditions and intent to leave: the nurses that were no longer able to remain in their profession may have left it already. The longitudinal part of the "Next-Study" provides an opportunity to overcome such problems, allowing for the assessment of causal relationships between working conditions, health outcomes and intent to leave. It will also provide data that will be useful for comparing intent to leave nursing with "actual" leaving, thus providing a sound background for the definition of nursing staff groups which are at higher risk for premature departure from the profession.

Occupational Diseases in Health Care Workers in the Czech Republic

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Health care workers represent a specific group of employees who are more or less exposed to various risk factors: infectious agents, allergens (especially disinfectants), anesthetics, cytostatics, ionizing and non-ionizing radiation, vibrations, overload of heavy physical work, noise, heat, and psychological stress (1, 2, 3, 4, 5, 6, 7, 8). In the Czech Republic, the health services are among the branches of the economy with the highest incidence of occupational diseases (3, 4, 9, 10, 11, 12, 13). We analyzed the occupational diseases reported in health care workers over the period 1996-2003. The source of data was the Czech National Registry of Occupational Diseases operating at the National Institute of Public Health in Prague.

A total of 2,334 cases of occupational diseases were reported in health care workers in the Czech Republic during 1996-2003. This represented 15.5 % of all occupational diseases reported throughout that period. The number of reported occupational diseases in health care workers was highest in 1998 (403 cases). In that particular year the occupational diseases in health care workers represented nearly one fifth of all occupational diseases reported in the Czech Republic. The relative incidence of occupational diseases in health care workers also culminated in 1998 (183 cases per 100,000 employees). Although the incidence in 2003 decreased substantially (to 96/100,000 employees), it still exceeded almost threefold the total incidence of occupational diseases in the Czech Republic. Occupational diseases with the highest incidence included infectious and skin diseases, with 1,837 and 385 cases, which means 78.7 % and 16.5 % of all occupational diseases in the health services, respectively. Other diseases occurred less frequently or only sporadically.

Infectious and parasitic diseases in health care workers

The most frequent infectious or parasitic diseases with inter-human

transmission were scabies, viral hepatitis and tuberculosis, with 1,027, 347, and 134 cases, which is 56.3 %, 19.0 %, and 7.4 %, respectively.

Scabies

Scabies occurred mainly in the health care workers who get into close contact with patients. These are nurses, auxiliary paramedical staff, physicians, and physiotherapists. Also workers who handle beddings of the patients are at high risk (cleaners, and laundry workers). Incidence of scabies was highest in nursing, retirement homes, and psychiatric departments. In addition to that, the disease occurred also in departments of internal medicine, surgery, dermatology, and rehabilitation, which signalizes a low level of hygiene in these departments. The youngest patient was 17 years of age, the oldest was 69. The shortest duration of employment at the workplace at risk was one year; the longest was 45 years. About 36 % of patients acquired the disease within the first four years of employment.

Hepatitis B

During 1996-2003, altogether 347 health care workers fell ill with a viral Hepatitis. There were 215 cases of hepatitis B, 82 cases of Hepatitis C, and 44 cases of Hepatitis A. Other types of hepatitis occurred only sporadically. The incidence of Hepatitis A or B decreased substantially over the reported period. While in 1996 there were 42 cases of hepatitis B and 13 cases of hepatitis A, only 9 health care workers contracted hepatitis B and there was no case of hepatitis A reported at all in 2003. This decrease was caused by virtue of the nationwide preventive vaccination, which started in 1983 (14, 15). Since then until the year 2000, over 100,000 health care workers were vaccinated against hepatitis B (14).

Hepatitis C

However, Hepatitis C still remains a problem. Only the chronic form of the disease was diagnosed in 67 of the 82 cases reported in 1996-2003, while the acute phase had passed sub-clinically. The fact that 11.6 % patients were younger than 30 years is definitely unfavorable. The prognosis in these patients is usually more serious because they are in danger of late occurrence of a tumor (16). Viral hepatitis was acquired mainly in nursery homes, at the departments of pediatrics, internal medicine, surgery, psychiatry, rehabilitation, clinical biochemistry, and in out-patient departments of general practitioners and dentists. Nurses, physicians, support staff, assistants, and cleaners were the most frequently affected occupations. The youngest patient was 18, the oldest was 79 years of age. The duration of occupation ranged from 6 months to 44 years. Almost 25 % of patients fell ill during the initial four years of employment.

Tuberculosis

Tuberculosis of the lungs lymph nodes, pleura, bones or other organs was diagnosed in 134 health care workers over 1996-2003. The numbers of yearly reported cases ranged between 12 and 21 cases. The most frequent occupations were nurses, physicians, support staff, assistants, and cleaners. They mainly worked at the departments of respiratory diseases and of pathology, less frequently at the departments of surgery, internal medicine, forensic medicine, microbiology, psychiatry, in nursery homes, and at public health stations. The youngest patient was 19, the oldest was 74 years. About 20 % of the patients were between 19 and 29 years of age. The shortest duration of employment was 5 months, the longest was 38 years. About 30 % of the patients became ill during the first four years of employment.

Others

Other infectious diseases (varicella, salmonellosis, epidemic keratoconjunctivitis, infectious mononucleosis, dysentery, rubella, herpes zoster, anthroponoses, etc.) occurred sporadically and showed a decreasing trend.

Skin and allergic diseases in health care workers

For several years, occupational skin diseases have been ranking second according to the frequency of reported cases (3, 4, 12). Altogether 385 cases of occupational skin diseases were reported in health care workers over 1996-2003. Contact allergic dermatitis was diagnosed in about 90 of them, irritative dermatitis in 9%, and allergic urticaria in 1%. The

most frequent sensitizers were disinfectants, especially those containing glutaraldehyde (37% of cases), rubber products (33%), cleaning agents (11%), and latex in rubber protective gloves (9.6%). Nurses, cleaners, auxiliary paramedical staff, dental assistants, physicians, and physiotherapists were the most frequently affected occupations. The patients aged from 18 to 65 years. About 22% of the patients contracted the disease between 20 and 24 years. About 38% of the diseases were diagnosed during the first year of employment.

Bronchial asthma, allergic rhinitis or a combination of these diseases were reported in 49 health care workers. The most frequent sensitizers were disinfectants (57%), especially those containing glutaraldehyde (31% of all cases). Latex from rubber protective gloves was ascertained to be a causal factor in 18% of respiratory allergic diseases. The most frequently affected occupations included nurses, assistants, auxiliary paramedical staff, and cleaners. The youngest patient was 18, the oldest was 57. About 31% of patients fell ill between 45 and 49 years of age. About 39% of diseases occurred between five and nine years of employment.

Occupational diseases in health care workers caused by chemical and physical factors

During the period 1996-2003, chemical noxae (hydrogen sulfide, chlorine, carbon monoxide, ammonia, etc.) caused altogether 20 cases of poisonings, mostly acute, including one case of fatal intoxication by hydrogen sulfide.

Occupational diseases caused by physical factors were mainly caused by overload with heavy physical work (33 cases) and by exposure to ionizing radiation (6 cases).

Altogether 24 workers suffered from carpal tunnel syndrome. Of them, eight worked as dental assistants and seven as masseurs. Tenosynovitis of the forearm, epicondylitis or arthrosis of the hands and wrists were diagnosed in nine health care workers. Again, most of them worked as physiotherapists, dental assistants or nurses. Their age ranged between 40 and 63 years, the duration of employment ranged from 5 to 42 years.

The diseases caused by ionizing radiation occurred only sporadically. The cases that were diagnosed over the period 1996-2003 were caused by accidents or high exposure, which occurred in the past, when the system of protection against ionizing radiation did not meet the high present-day standards (17, 18). In the reported period only four cases of radiation dermatitis, one case of a radiation cataract, and one case of lung cancer were acknowledged. The patients worked mostly as physicians or assistants at departments of radiology. At the time of diagnosis, their age was in the range of 51-80 years and the duration of an occupational exposure to ionizing radiation ranged from 5 to 46 years.

Conclusions

The analysis has demonstrated that the situation in health services in the Czech Republic concerning the occurrence of occupational diseases is far from being satisfactory. A substantial contribution to this unfavorable situation has been made by scabies which is otherwise a trivial disease, which can be considered as an indicator of low hygiene level in some health care facilities. This is definitely an alarming information. Most of the reported occupational infectious diseases could certainly have been prevented if the health care workers had been properly used personal protective equipments, followed regulation procedures and hygienic measures, and taken advantage of protective immunization, where available.

Analysis of the structure of pertinent occupations and of the duration of exposure at the time of establishing the diagnosis of an occupational disease has confirmed that the highest risk of acquiring an infectious disease is in nurses during the initial four years of employment at a workplace at risk. These workers probably underestimate the risk of infection and, simultaneously, have not acquired proper hygienic habits yet. Therefore we strongly recommend informing job applicants about potential hazards associated with the occupation they are applying for. Such employees should be continually instructed and tested in the field of occupational health safety. Lastly, it should also be mentioned that however perfect the preventive measures are, it is not feasible to completely prevent the occurrence of some allergic and infectious diseases.

NIOSH/CDC Resources for Health Care Workers

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Introduction

This summary article presents information obtained from research studies on health care workers in the United States. It is reasonable to assume that health care workers around the world face similar hazards and exposures. The information and solutions being applied in the United States may be useful to health care workers in other countries. Health care is the second-fastest-growing sector of the United States economy, employing over 12 million workers. Women represent nearly 80% of the health care work force. Health care workers face a wide range of hazards on the job, including bloodborne pathogens, biological hazards, needle-stick injuries, back injuries, chemical hazards, latex allergy, violence, and stress. Although it is possible to prevent or reduce health care worker exposure to these hazards, health care workers actually are experiencing increasing numbers of occupational injuries and illnesses. Rates of occupational injury to United States health care workers have risen over the past decade. This article provides information on accessing NIOSH publications and data bases for health care workers. These resources and data bases are available at no cost and can be found and viewed at www.cdc.gov/niosh/topics/healthcare/. Detailed information on specific topics related to health care workers is discussed below.

Biological Hazards

Bloodborne Pathogens: Exposures to blood and other body fluids occur across a wide variety of occupations. Health care workers, emergency response and public safety personnel, and other workers can be exposed to blood through needle-stick and other sharps injuries, mucous membrane, and skin exposures. The pathogens of primary concern are the human immunodeficiency virus (HIV), hepatitis B virus (HBV), and hepatitis C virus (HCV). Workers and employers are urged to take advantage of available engineering controls and work practices to prevent exposure to blood and other body fluids. The NIOSH data base of information and publications on Bloodborne pathogens can be found at www.cdc.gov/niosh/topics/bbp/.

Training for healthcare workers on the dangers of blood borne pathogens NIOSH, researchers at the Columbia University Mailman School of Public Health have developed a Web-based innovative learning program for healthcare workers about bloodborne pathogens. This simulation-training program is based on the premise that adults learn best when they actively participate in the learning process. Participants have an opportunity to read a simulated story based on a true event, make decisions, and come to conclusions on their own. Nurses who complete the training will receive up to three continuing education credits. For more information, visit the Bloodborne Pathogen Training for Nurses Web site at www.bbp-nursetraining.hs.columbia.edu/.

Tuberculosis: Health care and correctional facility workers have long been at risk of contracting Tuberculosis (TB). Cases in health care workers in the United States constituted 3% for consistency of all TB cases. TB is a potentially severe contagious disease that is spread from person to person through the air. The TB germs may spray into the air if a person with TB disease of the lungs or throat coughs, speaks, or sneezes. Anyone nearby can breathe TB germs into their lungs. People with TB infection do not feel sick and do not have any symptoms. However, they may develop TB disease at some time in the future. TB usually affects the lungs, but it can also affect other parts of the body, such as the brain, the kidneys, or the spine. If people have TB disease, they need medical help. If they do not get help, they can die. The NIOSH data base of information and publications on tuberculosis can be found at www.cdc.gov/niosh/topics/tb/

Chemical Hazards

Ethylene Oxide (EtO): This bulletin identifies potential sources of ethylene oxide (EtO) exposure from gas sterilizers in health care facilities

and describes control methods recommended by NIOSH. A complete system for controlling EtO exposures from gas sterilizers consists of both specific and general controls. www.cdc.gov/niosh/89115_52.html.

Glutaraldehyde: Glutaraldehyde is used as a cold sterilant to disinfect and clean heat-sensitive equipment such as dialysis instruments, surgical instruments, suction bottles, bronchoscopes, endoscopes, and ear, nose, and throat instruments. This chemical is also used as a tissue fixative in histology and pathology labs and as a hardening agent in the development of x-rays. The publication describes health effects of glutaraldehyde, how workers can be exposed to, and control methods and work practices to prevent or reduce worker exposures. (www.cdc.gov/niosh/2001-115.html).

Latex: Latex gloves have proved effective in preventing transmission of many infectious diseases to health care workers. However, for some workers, exposures to latex may result in allergic reactions. Reports of such reactions have increased in recent years - especially among health care workers. www.cdc.gov/niosh/topics/latex/

Nitrous Oxide: Several NIOSH publications provide information on preventing and controlling exposure to nitrous oxide during the administration of anesthetic gas. These documents can be viewed at www.cdc.gov/niosh/topics/dentistry/

Controlling Formaldehyde Exposures: During Embalming Research indicated that exposure to formaldehyde over a long time may also cause cancer. This publication describes a local exhaust ventilation system that effectively reduces embalmer's exposure to formaldehyde. It is available at www.cdc.gov/niosh/hc26.html.

Hazardous Drugs / Antineoplastic Agents: Traditional medications and bioengineered drugs can be hazardous to those who work with them. Health care workers who prepare or administer hazardous drugs, or who work in areas where these drugs are used or handled, may be exposed to these agents. Studies have associated workplace exposures to hazardous drugs with health effects such as skin rashes and adverse reproductive outcomes, and possibly leukemia and other cancers. Engineering and administrative controls, and proper protective equipment, can protect workers from exposures to hazardous drugs. In 2004, NIOSH released two new publications on the hazard of exposure to dangerous drugs. The first document is entitled Preventing Occupational Exposure to Antineoplastic and other Hazardous Drugs in Health care Settings. This NIOSH alert provides health care workers and employers with measures for minimizing exposure to hazardous drugs. It can be viewed at www.cdc.gov/niosh/docs/2004-165/pdfs/2004-165.pdf.

The second publication is entitled Antineoplastic Agents - Occupational Hazards in Hospital. This is a brief document that is intended to quickly communicate basic information to the health care worker and can be accessed at www.cdc.gov/niosh/docs/2004-102/pdfs/2004-102.pdf.

Other: There are numerous databases provided by NIOSH with information on hundreds of chemicals and their hazards, and what a worker can do to protect herself/himself from exposure to these chemicals. Chemical Safety Cards, Material Safety Data Sheets, Personal Protective Equipment, related links, and much more useful information is included. They can be accessed at www.cdc.gov/niosh/topics/chemical-safety/

Physical Hazards

Violence on the job: (1) NIOSH recommends that all hospitals develop a comprehensive violence prevention program. No universal strategy exists to prevent violence. The risk factors vary from hospital to hospital and from unit to unit. Hospitals should form multidisciplinary committees that include direct-care staff as well as union representatives (if available) to identify risk factors in specific work scenarios and to develop strategies for reducing them. All hospital workers should be alert and cautious when interacting with patients and visitors. They should actively participate in safety training programs and be familiar with their employers' policies, procedures, and materials on violence prevention. It can be viewed at www.cdc.gov/niosh/2002-101.html. (2) The NIOSH video (DVD) "Violence on the Job" discusses practical measures for identifying risk factors for violence at work, and taking strategic action to keep employees safe. It is based on extensive NIOSH research, supplemented with information from other authoritative sources.

The NIOSH Publication number is #2004-100d. It can be viewed at www.cdc.gov/niosh/docs/video/violence.html or the DVD can be ordered (no-cost) at www.cdc.gov/niosh/email-pubs.html

Eye Protection for Infection Control: The Centers for Disease Control and Prevention (CDC) recommends eye protection for a variety of potential exposure settings where workers may be at risk of acquiring infectious diseases via ocular exposure. This document provides background information and specific details on eye protection that can be used to supplement eye protection recommendations provided in current CDC infection control guidance documents. It is intended to familiarize workers with the various types of eye protection available, their characteristics, and their applicable use. Workers should understand that regular prescription eyeglasses and contact lenses are not considered eye protection. www.cdc.gov/niosh/topics/eye/eye-infectious.html.

Ergonomics and Musculoskeletal Disorders: This is a topic page containing publications on general Ergonomics Programs and Interventions, Evaluating Risk Factors for Lifting Tasks, Back Belts and Back Injury, Computer Keyboards & Video Display Terminals, Vibration, and other Related NIOSH Topic Pages. It can be accessed at www.cdc.gov/niosh/topics/ergonomics/. United States OSHA has issued guidelines to prevent ergonomic injuries associated with patient lifting and transfers in nursing homes and can be accessed at www.osha.gov/ergonomics/guidelines/nursinghome/final_nh_guidelines.html.

Female Reproductive Health

The Effects of Workplace Hazards on Female Reproductive Health: Many factors can affect a woman's reproductive health and her ability to produce healthy children. This document examines reproductive hazards for female workers. It can be accessed at www.cdc.gov/niosh/99-104.html

Other Hazards

Control of Smoke From Laser/Electric Surgical Procedures: During surgical procedures using a laser or electrosurgical unit, the thermal destruction of tissue creates a smoke byproduct. Research studies have confirmed that this smoke plume can contain toxic gases and vapors such as benzene, hydrogen cyanide, and formaldehyde, bioaerosols, dead and live cellular material (including blood fragments), and viruses. At high concentrations the smoke causes ocular and upper respiratory tract irritation in health care personnel, and creates visual problems for the surgeon. The smoke has unpleasant odors and has been shown to have mutagenic potential. Airborne contaminants generated by these surgical devices can be effectively controlled. This is a two-page NIOSH Hazard Control publication and be viewed at www.cdc.gov/niosh/hc11.html.

Psychosocial Hazards at Work: Anxiety, stress, and neurotic disorders in the workplace are associated with acute and chronic post-traumatic anxiety, reaction to stress, panic disorders, and other neurotic disorders not elsewhere classified. These disorders are more severe than the average injury or illness. In the U.S., affected workers experience a much greater work loss than those with all nonfatal injuries or illnesses-25 days away from work compared with 6 in 2001.

NIOSH offers several useful resources on job stress:

- (1) Working with Stress Video A brief introduction to work stress issues for the worker and manager. Topics include the causes of job stress, physical and psychological effects, and what can be done to minimize job stress. The video is available in both DVD and VHS formats, and can also be viewed online (17 minutes) at www.cdc.gov/niosh/video/stressdvd1002.html or ordered (cost free) at www.cdc.gov/niosh/email-pubs.html.
- (2) Stress... At Work This booklet highlights knowledge about the causes of stress at work and outlines steps that can be taken to prevent job stress. (www.cdc.gov/niosh/atwork.html).
- (3) Stress Management in Work Settings This publication summarizes the scientific evidence and reviews conceptual and practical issues relating to worksite stress management. It is a collection of original contributions that address current issues and problems in the field. (www.cdc.gov/niosh/87-111.html).
- (4) The Changing Organization of Work... NORA Report This report was developed as the first attempt in the United States to develop

a comprehensive research agenda to investigate and reduce occupational safety and health risks associated with the changing organization of work. Four areas of research and development are targeted in the agenda. (www.cdc.gov/niosh/02-116pd.html).

- (5) Anxiety, Stress, and Neurotic Disorders-Statistics in Worker Health from 2004 Chartbook. Provides data for anxiety and stress disorders based on magnitude and trend, age, sex race/ethnicity, severity, occupation, and industry. (www2a.cdc.gov/NIOSH-Chartbook/ch2/anxiety).

Surveillance

Worker Health Chartbook: This is a descriptive epidemiologic reference on occupational morbidity and mortality in the United States. A resource for agencies, organizations, employers, researchers, workers, and others who need to know about occupational injuries and illnesses. The 2004 Chartbook includes more than 400 figures and tables describing the magnitude, distribution, and trends of the United States occupational injuries, illnesses, and fatalities. It can be accessed at www.cdc.gov/niosh/docs/chartbook/.

Bibliographic Database for Health Care Workers: The NIOSH Safety and Health Topic Page for Health Care Workers is available at: www.cdc.gov/niosh/topics/healthcare/. A searchable bibliographic database of occupational safety and health publications, documents, abstracts, grant reports, and journal articles supported in whole or in part by NIOSH is available at this site. As of November 2004, the database, NIOSHTIC-2, contains 729 bibliographic entries related to health care issues.

For additional information, you may contact the NIOSH Publications Office at www.cdc.gov/niosh/email-pubs.html.

Exposure to Nitrous Oxide (N₂O) in Hospital Post-Operative Units

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Introduction

Surgical inhalation anesthesia is used to anesthetize patients to keep them free from pain during surgical procedures. Inhaled anesthetic agents include two different classes of chemicals: N₂O and halogenated agents. Workplace exposures to these agents occur in hospital operating rooms, recovery rooms, and other patient care units such as Intensive Care Unit. Anesthetic agents may leak from anesthesia equipment systems, components, and connections of the breathing circuit. Patients exhale anesthetic gases and vapors during and many hours after the surgery.

Nitrous Oxide (N₂O) is administered to patients at concentration of 60% to 70% through inhalation. Exposure to N₂O has been reported as a cause of reproductive adverse effects among operating room personnel. A number of studies have shown that there is an increased risk of spontaneous abortion among female employees exposed to anesthetic gases, in particular to N₂O (1).

Although previous epidemiological studies failed to provide any quantitative relationship between the concentration of N₂O and adverse health outcomes (1,2), regulatory agencies in North America and Europe have established rules and guidelines in order to control the level of exposure in operating rooms and other surgical units. In the province of Québec (Canada) the maximum acceptable concentration for an 8-hour exposure to N₂O is 50 ppm (3). The National Institute of Occupational Safety and Health (NIOSH-USA) recommended 25 ppm as 8-hours threshold concentration of N₂O (4). Under the Act Respecting Occupational Health and Safety in Québec, any pregnant women who works in conditions that may be dangerous to the health of her unborn child or to her own health has the right to be reassigned to other duties that do not involve such danger (5). Currently, Québec local public health centers (CLCSs) consider exposure to any concentration of N₂O hazardous to pregnant employees (6). It is also known that it is technically

impossible to achieve zero concentration of N₂O in operating rooms. Consequently, female employees are withdrawn from operating room and reassigned to a danger free-environment until the end of their pregnancy. After the surgery and recovery the patients are transferred to other hospital units including ICU and nursing wards (post-operative units). However, patients exhale N₂O for many hours after the surgery, therefore the health care workers who provide care for the patients in post-operative units are also exposed to N₂O. Previous research has demonstrated that these employees can be exposed to measurable levels of N₂O (7,8). Thus in Québec, the employees who provide direct care for patients after surgery are reassigned temporarily to a N₂O free zone. In McGill University Health Center (Montréal, Québec, Canada), pregnant employees such as nurses and nurse assistants are reassigned until it is reasonably assumed that N₂O concentration dropped to zero ppm (that is. until the patient no longer exhales N₂O). However, the duration of the temporary reassignment of female employees remained unclear and to some extent controversial in our institution and most likely across the province of Québec.

Method

The Department of Occupational Health and Safety of the McGill University Health Center has investigated this issue by monitoring the concentration of N₂O in the bedside of post-operative patients for several hours. A measurement instrument was used for evaluation of N₂O concentration. The measurement instrument was placed next to the patient bed and its sampling probe was placed in a hypothetical position of a caring nurse (150 cm from the floor, and 60 cm from the patient mouth). The instrument displayed the concentration of N₂O in ppm in the ambient air. The concentrations of N₂O were recorded every 10 minutes. The measurement continued until the concentrations dropped to as low as 0.1 ppm. This value was considered as zero concentration of N₂O. Several patients with various surgeries were included in our study. Factors such as patient age, sex, type and duration of surgery, and other environmental factors such as room ventilation were recorded. In total, six patients were included in our study.

Results

The shortest time needed to reach zero concentration of N₂O was four hours for a 70-year-old female patient with gastrointestinal surgery, while she was still in recovery room. The longest time needed to have zero concentration was 9.5 hours for 42-year-old female patient with gynaecology surgery. The patient was placed in a room in which there was no mechanical ventilation. For other patients it took between 5 to 8 hours to reach zero concentration of N₂O, although they have a similar duration of anaesthesia and they were placed in a room with no mechanical ventilation.

N₂O was only detectable at the patient bedside. Air monitoring in the two meters away from the patient bed did not show any trace of N₂O. The maximum observed concentration was 19 ppm. In general, the highest concentration was found during the first few minutes after patients were released from the operating room.

The concentration and time required reaching zero N₂O concentration is determined by a complex interaction of several factors such as patient age and gender, duration of surgery, and room condition. Due to limited number of observations, it was not possible to evaluate the interaction effects of these factors through statistical analysis of data. Nevertheless, our single regression analysis did not indicate any association between the duration of N₂O exhalation with either duration of anaesthesia or patient weight.

In summary, health care personnel in particular female pregnant employees in post-operative care units may be at risk of adverse health effects because in these units waste anesthetic gases that are exhaled from the patients are not properly controlled (8). Our study indicated that female employees may be exposed to levels as high as two third of NIOSH maximum (25 ppm) acceptable levels. Although the concentration N₂O falls rapidly after a peak 2-3 hours trough recovery, trace concentration of N₂O will be present around the patient bed and in the breathing zone of the care provider until 9.5 hour after the end of the surgery. The information can be used by hospitals that may seek to provide better protection for their female employees in their surgical care units.

New Research shows Workplace Violence threatens Health Services worldwide

Joint ILO/ICN/WHO/PSI research indicates violence undermines retention of health personnel and the delivery of quality health care everywhere

Extracts from a press release of 30 April 2002

Known to be a serious problem in many countries in the industrialised world, new research indicates that violence in the health care workplace is actually a global phenomenon. Crossing borders, cultures, work settings and occupational groups, violence in the health care workplace is an epidemic in all societies, including the developing world.

The research was commissioned by a joint programme on workplace violence in the health sector realised by the International Labour Office (ILO), the International Council of Nurses (ICN), the World Health Organization (WHO), and Public Services International (PSI). The joint programme aims to provide guidance for the development and implementation of international, national and local guidelines or policies to address and eliminate workplace violence in health care settings.

The new research results from developing and transition countries where data on this subject was previously either unavailable or scarce*, shows that more than half of the health sector personnel surveyed had experienced at least one incident of physical or psychological violence in the year previous to the study. In South Africa that figure reached 61%, in Lebanon 47% and in Thailand 54%. Research was also conducted in Portugal where the incidence was found to reach sixty percent.

The high prevalence of psychological violence (in addition to widespread physical violence) was one of the main conclusions of the consultation. Many health workers reported that the violence in the streets is spilling over to the hospital. In addition stress resulting from health systems being restructured is a major contributing factor to the generation of workplace violence.

Workplace violence affects all health workers, both women and men, though some are more at risk than others. Ambulance staff exposure to violence is extremely high in all countries investigated. In all the studies, nurses and physicians also report very high levels of exposure.

Consequences

The consultation highlighted the negative consequences of such widespread violence on the delivery of health care services, which can include deterioration of the quality of care provided and the decision by health workers to leave the health care professions. This can result in a reduction in health services available to the general population and an increase in health costs. In developing countries particularly, equal access to primary health care is threatened if health workers, already a scarce resource, abandon their profession because of the threat of violence.

Other findings

Workplace policies

In most countries studied, there were no specific workplace policies in place to prevent or respond to workplace violence, which resulted in

- * under-reporting of violent incidents,
- * poor follow-up of reported incidents,
- * no sanction of the perpetrators, and
- * dissatisfied victims.

Stress and violence

The research also highlighted the key interrelationship between stress and violence. In some cases approximately 2/3 of victims suffer from symptoms of post-traumatic stress disorder (PTSD) after experiencing an incidence of violence. While being the victim of violence in the health sector workplace causes high levels of stress, such stress is also a factor in creating violent behaviour. The data furthermore confirmed that witnesses are often stressed by their exposure to an incident of violence.

...and

The consultation confirmed that the definitions used for workplace violence are universal. The data demonstrated that the health sector is at the forefront as far as workplace violence is concerned. This groundbreaking research gave a unique insight into the situations and professions at major risk and allows for the development of targeted interventions.

For further information contact Linda Carrier-Walker, (carrwalk@icn.ch), www.icn.ch

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.

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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, or post one copy to:

Evelyn Kortum – Editor of GOHNET

World Health Organization

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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. Pelmeur PL. Hand-Arm Vibration Syndrome. An Overview. In: *Hand Arm Vibration Syndrome. HHSC Handbook No. 24. 1999. P 2.*
3. Piligian G, Herbert R, Hearn 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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Design: J-C Fattier

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Printed in Geneva, Switzerland

Printed on paper made from managed softwood plantations, where at least one tree is planted for every tree cut down.

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Alternatively you may request a copy of the form by e-mail from ochmail@who.int or consult our website for an electronic version:

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Global Occupational Health Network (GOHNET)

Survey

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