The Disaster of Ghislenghien and the Impact on Mental Disorders

Introduction
On the 30th of July 2004, a serious gas explosion on the industrial site of Ghislenghien killed 24 people; many others were severely wounded. This man-made disaster disturbed the lives of many people both physically and mentally. In collaboration with the Federal Public Service Health, Food Chain Safety and Environment, the faculty of Clinical Psychology of the UCL (Université catholique de Louvain) and the Stress and Trauma Research Centre of the Royal Military Academy, the IPH’s Unit of Epidemiology carried out a study to investigate the effects of such a catastrophe on the health of the population, with special focus on mental health.

Objectives
This study compares the prevalence rates of mental disorders in the population of the villages affected by the disaster with prevalence rates of the overall Belgian population as measured by the 2001 Belgian Health Interview Survey (HIS - Epi-scoop 2003, nr. 1).

Methods
In December 2004, about 5 months after the catastrophe, auto-questionnaires were sent by regular mail to 3448 families living in 7 different surrounding villages as well as to personnel of 4 companies located on the industrial site of Ghislenghien. All individuals questioned were in one or another way involved in the catastrophe either by their geographical or professional proximity or by the connection with their relatives. The response rate was 18% (n=607 families).

For this study, data of 1027 individuals aged 15 years and older were used. Mental health was assessed using the ‘Symptom Checklist-90-Revised’ (SCL-90-R) subscales. Prevalence rates of recent somatic disorders, depression, anxiety and sleeping disorders as well as a mental health comorbidity index were compared with weighted HIS data for Belgium, the Walloon Region and the province of Hainaut. Multivariate analyses were performed using logistic regression models, adjusted for age, gender and educational level.

Results
The recorded prevalence rates of the four examined mental disorders are much higher than the data from the HIS (Figure 1). Logistic regressions show that, compared to the province of Hainaut, the affected population of Ghislenghien experiences 3 times more somatic disorders (OR 2.9; 95%CI 2.2-3.8), 2.5 times more depressive disorders (OR 2.6; 95%CI 2.0-3.4), 3 times more anxiety disorders (OR 2.9; 95%CI 2.2-3.8) and 1.5 times more sleeping disorders (OR 1.5; 95%CI 1.2-1.9).

Among the Ghislenghien population of 15 years and older, 36.7% reported at least one recent mental problem. Among those having a mental health disorder, 34% have only one mental problem, 16% report 2 problems, 11% have 3 problems and 39% have 4 mental problems. A maximum comorbidity scale (presence of 4 mental problems) is much more prevalent among the population of Ghislenghien when compared to a reference population such as that of Belgium, the Walloon Region or the province of Hainaut (Figure 2). Logistic regression shows that, compared to the province of Hainaut, the affected population of Ghislenghien suffers 6.5 times more from all mental disorders.
Occupational blood exposure in Belgian hospitals

Preliminary results of the national surveillance of occupational blood exposure in Belgian hospitals

Introduction

Needle stick injuries (NI), injuries by instruments and blood and body fluid exposure occur frequently in hospitals and other health care institutions. The psychological, physical, legal and financial consequences cannot be underestimated. Therefore the Unit of Epidemiology of the IPH started in June 2003 in collaboration with a scientific steering group a national surveillance network of occupational blood exposure (OBE) among hospital workers.

Objectives

The surveillance contributes to the reduction of the infection risk of OBE among hospital workers by the identification of risk groups, material at risk and high-risk circumstances. The surveillance enables the improvement of preventive control measures and the development of safer devices and work practices. It offers hospitals a standardised method to collect information on OBE and to follow up results in time as well as to make inter-hospital comparisons through a confidential feedback.

Methods

The minimal surveillance period was one year; enrolment was voluntary and free of charge. Every afflicted hospital worker filled out a standardised questionnaire form. The collected information was recorded by the hospitals using the Belgian version of the EPINet™ software. Anonymous data were sent to the IPH for analysis, benchmarking and feedback of the results to the hospitals.

Results

During the first registration period (June 2003–January 2005), 18% of the Belgian hospitals (n=35 hospitals) participated. On average, 9.9 incidents of OBE are reported per 100 hospital beds per year (95% CI 8.1-11.2 OBE/100 beds). This rate is similar to rates found in other European surveillance networks. The surveillance showed great variation between all participating hospitals (2.3-20.0 OBE/100 beds). Nurses reported OBE most frequently (67% of all reported OBE and 5.6 NI/100 nurses per year (95% CI 5.1-6.0)), physicians reported only 7% of the OBE and 9% of the OBE occurred among logistic personnel (mainly cleaning personnel). Hollow bore needles are involved in three quarters of all NI, they provide the highest transmission risk. Intravenous (IV), intra-muscular (IM), subcutaneous (SC) and intradermal (ID) needles (27%); IV catheter stylets (11%); and vacuum tube blood collection needles (10%) are the top three devices involved. Analysis shows that the most frequent scenario of a NI among nurses occurred after an injection with an IV, IM, SC, ID needle in the patient room (44% during withdrawal of the injection needle and 24% during disposal). Forty percent of the accidents occurred among persons who are not the original users of the causing device and three quarters of the NI occurred among non-care personnel during disposal. This indicates disposal-related problems, as there are overfilled needle containers, needles piercing side of container or trash bag, not enough disposal containers in neighbourhood, recapping used needles, not clearing up immediately after use and leaving behind needles in inappropriate places (Table 1).

Seventy percent of the NI is considered preventable by using safety devices, through the modification of working practices, training, sensibilisation campaigns, adapting personnel staffing and management-commitment (in italic in Table 1).

Conclusions

The first results allow us to estimate the yearly number of OBE in participating hospitals while describing the most frequent occurring scenarios of OBE and the diversity of mechanisms. Results identify specific locations of OBE, devices, acts and job categories at risk and orient preventive measures.

References

1 The Exposure Prevention Information Network (EPINet™) is a program for recording and tracking percutaneous injuries and blood and body fluid contacts developed by the University of Virginia in 1991. The EPINet™ system is used by more than 1,500 hospitals in the US and it has also been adopted in other countries, including Canada, Italy, Spain, Japan and the UK. http://www.healthsystem.virginia.edu/ internet/epinet/subpage2.cfm


E. Leens

The first national campaign to promote hand hygiene in Belgian acute care hospitals

Introduction

It is well understood that the cross-transmission of micro-organisms through the hands of hospital personnel during care is the main source of hospital acquired (nosocomial) infections. A good understanding and application of the principles of hand hygiene is therefore the most efficient prevention measure to reduce the incidence of these infections. Previous studies, however, showed that compliance with the basic and simple rules of hand hygiene is often poor and rarely above 50%. Several intervention studies have shown that increasing the quality of hand hygiene was associated with decreased nosocomial infection rates.

Objectives

At the beginning of 2005 a national campaign was launched to

together (OR 6.5; 95%CI 4.2-10.1).

Conclusions

This study shows that mental disorders are common and more prevalent in the population affected by the disaster compared with the general population. The affected population of Ghislenghien has significantly higher prevalence rates of recent somatic disorders, depression, anxiety and sleeping disorders as compared to reference populations. Striking is the very high percentage of persons with comorbidity. The catastrophe has, when compared to the population of the province of Hainaut, a significantly higher impact on the occurrence of the 4 studied mental disorders together. The low response rate hampered the inference of the data, as selection bias cannot be excluded.

Fourteen months after the catastrophe, auto-questionnaires have been sent to all the individuals who responded to the first questionnaire to follow-up the observed mental health problems. The results of the study will soon be available on http://www.iph.fgov.be.

A. Verspoten
promote the compliance with hand hygiene guidelines in Belgian Acute Care Hospitals. This campaign was organised by the federal platform for hospital hygiene and supported by BAPCOC, the Belgian Antibiotic Policy Coordination Committee. The Epidemiology Unit of the IPH assured the data management and analysis of this campaign.

Methods

The first part of the campaign was the measurement of compliance with existing hand hygiene guidelines in the participating hospitals by independent observers and the distribution of questionnaires intended to explore the knowledge of and attitudes towards hand hygiene of hospital employees. These baseline measurements were followed by an awareness campaign with flyers and posters for hospital personnel and for patients and visitors. Specific information sessions were organised for hospital employees and were supported by centrally conceived educational material. After this intervention, the compliance was again observed and measured in the participating hospitals and compared to the observations before the campaign. The whole campaign ran over a period of 6 months.

Results

Over 90% of the acute care hospitals in Belgium participated and for 130 hospitals observation data before and after the campaign could be compared with over 150,000 observations. Compliance with hand hygiene guidelines was approximately 49% before the campaign with a share of 65% using alcohol rubs. After the awareness and educational campaign this compliance attained almost 70%, a highly significant increase of 20% (Figure 1). Moreover, the share of using alcohol rubs in the total of hand hygiene practiced (alcohol rub + soap) improved with 12%. This increase in compliance was observed in all categories of personnel. The pre-campaign questionnaires (n=29,291) showed an alarming lack of knowledge with an overall score of 4 out of 10 correct answers to the ‘knowledge’ questions. Nursing personnel had the best knowledge, followed by the doctors. The ‘attitude’ questions showed that wearing protective gloves was the main reason for not complying with hand hygiene guidelines.

Conclusions

This first national campaign for Hand Hygiene was a tremendous success considering the rate of participation as well as the improvement of compliance after the campaign. This campaign was unique in a sense that it not only aimed at awareness and education but also measured the impact on the work floor. It was also unique because it was a national campaign aiming to increase awareness not only of the hospital staff but also of patients and visitors. It is, however, of paramount importance that such campaigns be repeated as it is very well known that the effect wears off quickly with time. The ultimate goal is that repeated campaigns will lead to a consolidated change in knowledge and attitude and thereby to a lasting reduction of the occurrence of nosocomial infections.

De plus amples informations sont disponibles dans l’article écrit par l’organisatrice de la campagne, le Dr Anne Simon (NOSO – info 4ème trimestre 2005, vol IX n°4 p14-16).

Tous les documents utilisés pour cette campagne sont téléchargeables gratuitement sur le site de la BAPCOC :

C. De Laet

**Disability-free life expectancy in Belgium, 2001: results from the Socio-economic Survey**

Introduction

In the previous Epi-Scoop (Vol 5, nr. 3, 2005), the health questions of the 2001 Belgian census (called the Socio-economic Survey) were described and the prevalence of disability by age and gender were presented. In this contribution the disability-free life expectancy (DFLE) is estimated by combining the mortality information with the disability information. As life expectancy (LE) expresses the number of years a person at a certain age can expect to live, the DFLE represents the average number of years a member of a population can expect to live without disability (if there is no future change in the mortality and morbidity experience of a population). The DFLE divides the LE in years without and with disability. The analysis was done by the Unit of Epidemiology of the IPH, in collaboration with the SESA (Centre d’études socio-économiques de la santé) at the UCL (Université catholique de Louvain) and the demography focal point at the VUB (Vrije Universiteit Brussel).

Methods

The Sullivan method was used to calculate health expectancies.

![Figure 1: Compliance with Hand Hygiene (HH) guidelines and proportion of the use of alcohol rubs before and after the 2005 campaign (n = 130 institutions)](image)

The health questions of the 2001 Belgian census asked people if they suffer from one or more longstanding diseases, chronic conditions or handicaps. Among the positive answers, the presence and the severity of disability were estimated using the following question: ‘Are you restricted in your daily activities due to this (these) illnesses(es), chronic condition(s) or handicap(s)?’ Those answering ‘continuously’ were defined to be severely limited; those answering ‘every now and then’ were defined to be moderately limited, while those answering ‘not or seldom’ or those who were without any longstanding morbidity were defined to be without limitations. The total variance of the health expectancy estimates was computed by adding up the variance of the mortality and the variance of the census data.

Results

At birth, the LE in females is 81.67 years; 81% of these years or 66.14 years are expected to be without disability (Table 1). The remaining 15.53 years are almost equally divided into years with moderate (7.81 years) and severe (7.72 years) disability. The LE at birth for males is 75.42 years and the DFLE is 62.82 years or 83% of the LE. The LE with moderate disability is 6.62 years while the LE with
severe disability is 5.98 years. At birth a man can expect to live respectively 9% and 8% of his life with moderate and severe disability.

At 65 years, women have a LE of 20.23 years. At that age, the DFLE is 11.16 years or 55% of the remaining life; the expected years with disability (9.07 years) are mainly years with severe disability (5.33 years). Women 65 years old will thus live 26% of their lives with severe disability and 18% with moderate disability. For men, the LE at 65 years is 16.23 years: 9.67 years (60%) without disability, 3.01 years (18%) with moderate disability and 3.55 years (22%) with severe disability.

At birth, the LE of women is 6.25 years longer than that of men (Figure 1). Women also live 3.32 years longer without disability. All the gain is not positive as they also live 2.93 years or 47% of those gained years with disability. At 65 years, the gender difference in LE is still 4 years. However, for women, this difference represents almost two thirds of gained years to live with disability (+2.51 years).

Most of the disabled years are years with severe disability (1.78 years). Women will only live 1.49 years longer without disability.

**Conclusions**

Women not only live longer but they also tend to live more healthy years without disability. However the numbers of healthy years they gain over men are only a fraction of the differences in LE. Therefore women can also be expected to live more years in poor health. The proportion of the gain in life expectancy of women over men is occupied by years of poor health and these increase with age. At birth, of the 6.25 years gender difference, 46% are years with disability of which most with severe disability. At 65 years, the difference in LE is 4 years of which 63% with disability.

H. Van Oyen

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**HEALTH INTERVIEW SURVEY 2004**

In 2004, IPH set up its third Belgian Health Interview Survey.

The full report (PDF format) of this survey will be published online at:


The main findings of the 2004 survey will be presented in our June issue.

J. Tafforeau