

Introductory Report: Decent Work – Safe Work



International
Labour
Organization

XVIIIth World Congress on Safety and Health at Work
Prevention in a Globalized World – Success through Partnerships



Introductory Report: Decent Work – Safe Work

by

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**XVIIIth World Congress on Safety and Health at Work
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“... All too often lives are shattered unnecessarily because of poor working conditions and inadequate safety systems... Let me encourage everyone to join the International Labour Organization in promoting safety and health at work. It is not only sound economic policy, it is a basic human right...”

(Kofi Annan, Secretary-General of the *United Nations*)


“... Prevention is paying not only in human terms but also in better performance by businesses and national economic strength. Together we can make sure that decent work is safe work ...”

(Thaksin Shinawatra, Prime Minister of Thailand)

“...Promoting a Safety Culture is the theme of this year’s World Day for Safety and Health at Work. This promotional initiative is an important complement to the normative foundation of OSH at work... [We will] work with other nations to implement the Global Occupational Safety and Health Strategy adopted at the 2003 International Labour Conference...”

(Tarja Halonen, President of Finland)

(Extracts from video messages and speeches delivered on
World Days for Safety and Health at Work, 2003-2005)



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Introduction

Throughout the world, there is growing acceptance that accidents and ill-health at work impact not only on the lives of individual workers, their families and their potential for future work, but also the productivity and profitability of their enterprises and ultimately the welfare of the society in which they live. In short, safety and health at work makes good business sense, and maintaining acceptable standards is seen as an integral and key component of societal development, poverty alleviation and of 'decent work'.

The ILO firmly believes that work-related accidents and ill-health can and indeed must be prevented, and that action is needed at international, regional, national and enterprise levels to achieve this. Yet, globally, the statistics appear to show an increasing trend in occupational accidents and diseases. As the ILO Director-General said when referring to the Decent Work Agenda, "Decent Work must be Safe Work, and we are a long way from achieving that goal".

The protection of workers against injury and disease has always been a key issue for the ILO since it was founded in 1919, and many of its activities have been directed to that end. Many Conventions, Recommendations and other instruments on occupational safety and health (OSH) have been adopted over the years, and these have helped to improve working conditions throughout the world. This impetus has been maintained, and recent years have seen both the adoption of a Global Strategy for OSH¹, which seeks to integrate and enhance the ILO's activities in this area, and the development of a new promotional framework for OSH, intended for adoption as a Convention in 2006.

This report provides an overview of the most recent estimates of occupational and work-related accidents and diseases, world-wide, some of the causes for recent changes and what the ILO and its member States are doing to improve conditions in the workplace for the millions who are at risk from injury.

¹ ILO: *Global strategy for occupational safety and health - Conclusions adopted by the International Labour Conference, 91st Session, 2003.*

I.

The global picture: latest estimates of occupational accidents and work-related diseases

The impact of occupational accidents and diseases (which are 100% work-related and often compensatable) and other work-related diseases (which are only partly caused by work) can be measured using several different indicators. Reported accident and diseases statistics provide perhaps the most direct indicator, but such data are often very incomplete since under-reporting is common and official reporting requirements frequently do not cover all categories of workers anyway – those in the informal economy for example. Other indicators need to be used as well to obtain a fuller picture, such as compensation data, disability pensions and absenteeism rates, although these too provide incomplete data. For example, no country records and compensates all occupational accidents and diseases, although data for occupational accidents are more comprehensive than those for occupational diseases. These indicators may be linked together, as, for example, when estimating Disability Adjusted Life Years (DALYs).

The latest global estimates of the numbers of work-related accidents and diseases have therefore been based on official statistics from all Regions of the world for 2001, particularly from countries that record such data reasonably well, and extrapolated using a number of indicators as mentioned above. The year of 2001 was chosen, since this is the latest year for which internationally comparable data on occupational accidents and estimates of mortality from the WHO were available. Earlier estimates were based on data from the year 1998.

According to the latest ILO estimates for accidents and diseases, there are globally about

2.2 million work-related deaths annually

which represents about a 10% increase on the estimate given in the Introductory Report to the XVIth World Congress on Safety and Health at Work in Vienna, 2002². The following tables, and Annex 3, give more details, comparing estimates for 2001 with those for 1998 and providing a breakdown by different world regions.

² See http://www.ilo.org/public/english/protection/safework/wdcongrs/ilo_rep.pdf

Table 1. Progress of estimated and reported fatal and non fatal accidents, 1998- 2001 (legend, see Table 2 below)

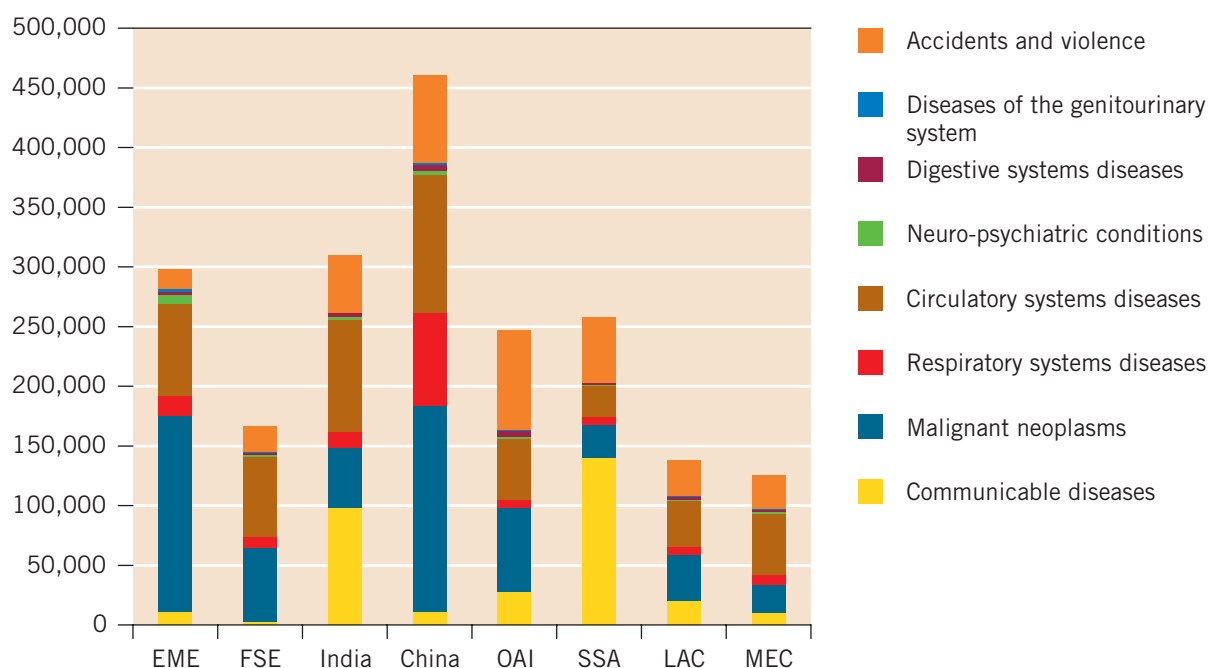
Region	Economically active population (2001)	Economically active population (1998)	Fatal accidents reported to the ILO (2001)	Accidents causing 3+ days' absence reported to the ILO (2001)	Fatal accidents reported to the ILO (1998)	Accidents causing 3 days' (+) absence reported to the ILO (1998)	ILO Global Estimates on Fatal Accidents 2001	ILO Global Estimates on Fatal Accidents 1998	Accidents causing 3+ days' absence Average (2001)
EME	419,732,002	409,141,496	14,316	7,527,083	14,608	7,631,977	15,879	16,170	12,118,393
FSE	183,089,714	184,717,127	7,853	343,004	8,665	582,287	17,416	21,425	13,291,068
IND	443,860,000	458,720,000	222	928	211	0	40,133	48,176	30,627,865
CHN	740,703,800	708,218,102	12,736	61,329	17,804	75,773	90,295	73,615	68,909,715
OAI	415,527,598	404,487,050	3,051	141,349	5,631	252,499	76,886	83,048	58,676,113
SSA	279,680,390	260,725,947	145	27,015	1,675	47,105	53,292	54,705	40,670,012
LAC	219,083,179	193,426,602	2,009	776,938	6,998	1,699,107	39,372	29,594	30,046,941
MEC	135,220,721	112,906,300	1,416	153,785	1,876	191,164	17,977	18,986	13,719,565
WORLD	2,836,897,404	2,732,342,624	41,748	9,031,431	57,468	10,479,912	351,251	345,719	268,059,671

Table 2. Latest Estimates on Work-related Fatalities, caused by both occupational accidents and work-related diseases.

Region	Economically active population (2001)	ILO Global Estimates on Fatal Accidents 2001	Fatal work-related diseases calculated using age structures	Work-related mortality calculated using age structures (accidents and diseases)	Deaths caused by dangerous substances (age)	Fatal work-related diseases calculated using gender structures	Work-related mortality calculated using gender structures (accidents and diseases)
EME	419,732,002	15,879	281,364	297,243	64,019	286,998	302,877
FSE	183,089,714	17,416	148,194	165,610	35,512	153,564	170,980
IND	443,860,000	40,133	261,891	302,024	64,894	325,350	365,483
CHN	740,703,800	90,295	386,645	476,940	102,606	414,024	504,319
OAI	415,527,598	76,886	178,786	255,672	54,811	208,402	285,288
SSA	279,680,390	53,292	211,262	264,554	55,811	387,721	441,013
LAC	219,083,179	39,372	108,195	147,567	31,571	116,135	155,507
MEC	135,220,721	17,977	120,725	138,702	29,817	140,941	158,918
WORLD	2,836,897,404	351,251	1,697,061	2,048,312	438,480	2,033,135	2,384,385

World Bank Regions: EME - Established Market Economies; FSE - Former Socialist Economies; IND - India; CHN - China; OAI - Other Asia and Islands; SSA - Sub-Saharan Africa; LAC - Latin-America and Caribbean; MEC - Middle Eastern Crescent

Table 3. Global Estimated Work-Related Fatalities by Region , absolute numbers, legend see table 2



The methodology

Global estimates of **work-related deaths caused by diseases** have been made using attributable fractions for work-related mortality due to specific disease categories and injuries. Calculations were made using two methods: one used the attributable fractions for different age structures and the second those for different sexes separately. An attributable fraction can be “interpreted as the fraction of a disease [or injury] which would not have occurred had the factor been nonexistent in the population in question”³. These attributable fractions or percentage figures for different disease categories are based on data about existing exposures to known factors of work-related diseases and their proven impact on exposure - outcome relationship and morbidity to these diseases, in particular, in industrialized countries.

Such studies have been carried out only to a limited extent, if at all, in developing countries. However, the exposure/disease relationship is expected to be largely consistent with that in industrialized countries, although a few exceptions may exist (see ILO Introductory Report to the World Congress in Vienna in 2002⁴).

The number of **fatal occupational accidents** was estimated firstly using reported frequency rates of fatal accidents (fatals/100 000 workers) obtained from ILO member States that report their accident data most reliably, in three economic sectors:

1. agriculture/fishing/forestry

³ Nurminen M, Karjalainen A.: Epidemiologic estimate of the proportion of fatalities related to occupational factors in Finland. Scand J., Work Environment Health 2001; 27(3):161-213

⁴ www.ilo.org/public/english/protection/safework/wdcongrs/ilo_rep.pdf - ibid

2. manufacturing industries and construction
3. service industries

These rates were complemented by country data when available and then applied to the total employment figures obtaining the fatality figures by the three economic sectors and by country⁵, see Annex 3.

Non-fatal occupational accidents were estimated using the reasonably stable ratio of fatal accidents to non-fatal accidents that cause an absence of 3 days or more. This accident pyramid ratio is roughly 1/1000, or every thousandth accident leads to a fatality when high quality and reliable recording and notification systems are used. Three different estimates were used:

1. the highest estimate was based on the average reporting rates of Finland, France, Germany and Luxembourg,
2. the lowest estimate was 50% of the above
3. the average estimate, shown in the tables above, was 75 % of the country rates between fatal and non-fatal accidents.

Reported and estimated numbers are shown next to each other. Major factors influencing the work-related death figures were listed in the Introductory Report to the World Congress in 2002.

A commentary

These figures represent a small but significant increase in the numbers of work-related accidents and diseases since the previous study. There appear to be several reasons for the increases from previous estimates, the main ones being:

1. The total number of workers (economically active population) has increased.
2. The gender disaggregated results for work-related diseases were clearly higher (2.38 million deaths) than those calculated by both sexes together for specific age groups (2.03 million). These age groups were 15- 29, 30-44, 45-59, 60-69 and 70+. Most workers in the older age groups had already retired and estimates were only made for those suffering from diseases with long latency periods. The age groups calculations are expected to be more accurate while the average value has been taken for the global estimate: 2.2 million.
3. Global figures for fatal accidents were fairly stable and increased only slightly, increasing in developing and decreasing in industrialised countries. Changes, for example in Latin America, reflect new data on both fatal accident rates, better coverage and larger manpower, while the decrease in Indian figures, for example, is largely based on improvements in reference countries as very limited information was available for India itself.
4. According to latest data, accidents account for the biggest share of work-related mortality in Other Asia and Island and China (Table 4). However, work-re-

⁵ Hämäläinen P., Takala J., Saarela K: Global Estimate of Occupational Accidents, *Safety Science*, accepted for publication in 2005.

lated communicable diseases, such as work-related malaria and other infectious diseases create the greatest burden in Sub-Saharan Africa and India as well as in other sub-regions. Furthermore, accident victims on average are much younger than those suffering from work-related diseases and the potential loss of working life is longer.

5. Although exposure to toxic substances in the workplace are now generally better controlled in industrialized countries than they were, many such countries are now witnessing a significant increase in the rate of fatalities from past exposures to certain substances because of the latency of some diseases. This is especially so for asbestos. For example, the UK estimates that at least 3500 people in Great Britain die each year from mesothelioma and asbestos-related lung cancer and that annual deaths are predicted to go on rising into the next decade. There is a big lesson here for those countries that still continue to use asbestos in manufacturing processes.

It is a well-known fact that certain sectors are more dangerous than others. One of the key reasons for the favourable declining fatal accident trend in industrialized countries is the gradual change in patterns of employment: fewer people now work in hazardous sectors, such as steel mills, shipbuilding and ship breaking, agriculture, forestry and mining, and more are employed in the relatively safe service sectors. Conversely, the industrialization of developing countries is often accompanied by a rapid increase in numbers of fatal and non-fatal accident rates, with the growth of new factories and the development of the infrastructure, the construction of new buildings and roads, all of which may employ untrained (and migrant) workers in new environments, exposed to risks hitherto unknown to them. If the experience of industrialized countries is to be repeated, fatal and major accidents and disease will continue to increase until a plateau is reached, as prevention policies and programmes gradually gain momentum, enforcement of legislation begins to take effect and workplace risks become properly managed.

This rapid increase of accidents in industrializing countries may be partly explained by improved recording and compensation systems, which will tend to increase official statistics, although rural and informal economy working populations continue to be outside such systems. This applies to both legal and compensation coverage as well as to that of the inspection and occupational health services. Industrial and service sectors are better covered and thus recording systems produce more realistic figures.

Work-related non-fatal diseases

The causes of work-related diseases are complex⁶. In some cases a work-related factor may be the only cause of the disease, but it is much more common for work-related factors to increase the risk of disease together with other factors. Work-related factors also often aggravate an already established disease. Although the ILO recently established a new list of occupational diseases⁷, the concept of occupational diseases and recording them depends on administrative decisions in each member

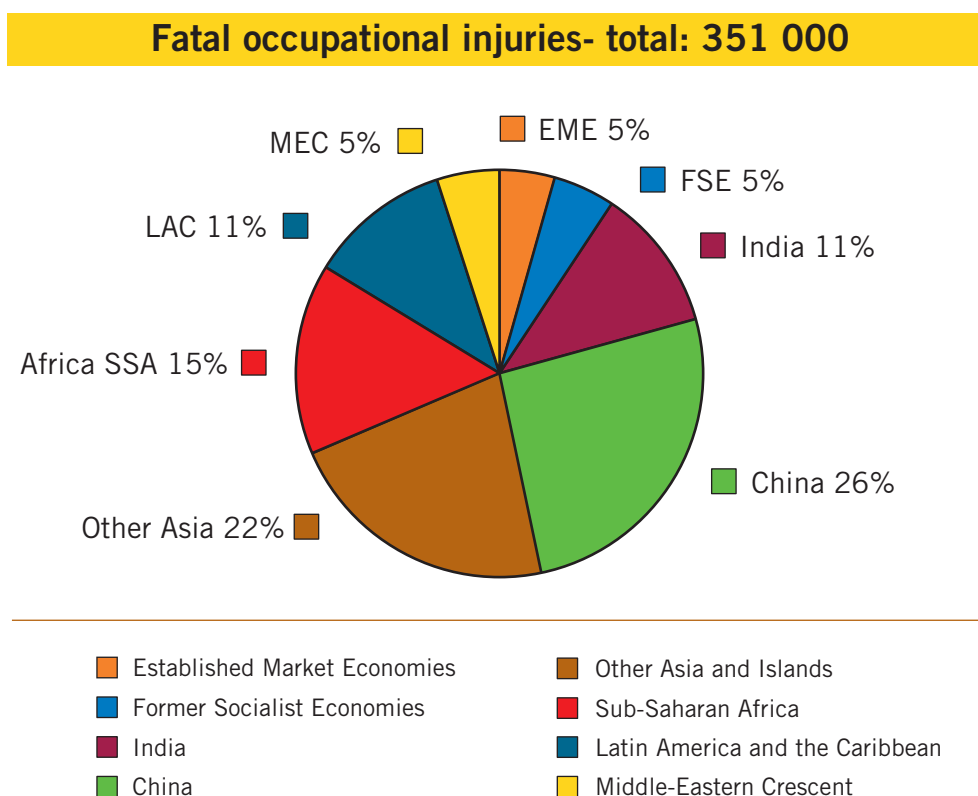
⁶ See, for example, Chapter 3 of Work and Health in the EU, a statistical portrait – Eurostat, European Commission, 2004 (contact eurostat@mail.europa.eu)

⁷ The List of Occupational Diseases Recommendation, 2002 (No. 194) – see <http://www.ilo.org/ilolex/english/recdisp1.htm>

State. It also appears that the member States that report most occupational diseases are those with the best systems of protection, including the recording and compensation of such diseases.

Work-related diseases are a wider concept than occupational diseases and cover all diseases where work is a contributory cause. As a hypothetical example, one could have 10 cases of diseases for which a work-related factor is estimated to have contributed a 30 % increase in risk in each case, the remaining 70 % being due to causes not related to work. Epidemiologically, 10 cases of a disease each with a 30 % contribution from a harmful occupational exposure would equate to 3 cases of the same disease that could have been wholly prevented by avoiding the harmful occupational exposure⁸. The way to identify these diseases is to carry out labour force surveys that take into account the self-reported diseases (and injuries). When these are well done and when the population surveyed is aware of the possible causes of work-related diseases they may provide a good estimate of the magnitude of the problem.

Table 4. Share of absolute figures of fatal occupational injuries, world 2001



The annual number of non-fatal work-related diseases has earlier been estimated to be 160 million. The British (1998) and Finnish (2000) surveys on self-reported work-related illnesses came to the conclusion that 7.3% and 8.3% respectively of those employed report annually one or more work-related illnesses that caused absence from work. This would mean in the world population – provided that workers are not health-

⁸ *Work and Health in the EU, a statistical portrait – ibid.*

ier in other parts of the world – that between 184 and 208 million workers suffer from work-related diseases. About 2.3% or 58 million of those suffer from illnesses that cause 4 days or more absence from work. The EU Labor force survey identified a prevalence rate of 5372 cases per 100 000 persons a year. In Nigeria a much higher percentage was found, probably due to the perception that in the informal economy and in agriculture, people work for a much higher proportion of the day. In the UK, the latest (2003-2004) prevalence rate of all self-reported work-related illness was estimated to be about 4750 per 100,000 workers, with musculo-skeletal disorders and stress, depression and anxiety being the most commonly reported⁹.

Taking into account the under-employment in a number of countries and the increased manpower the earlier estimate of **160 million** work-related diseases is reasonable for the 2.8 billion work force, if also taking into account non-recorded, part-time, child and other informal sector workers.

Occupational injuries

Although fatal occupational injuries caused by accidents are placed third when looking at the main reasons for deaths at work, there are two main aspects that must be kept in mind:

- (a) Fatal accidents usually occur to workers who could still have had a long working career ahead of them and some occur to young and inexperienced workers. A new estimate of 22,000 fatalities among working children has been made in using the number of child workers that are in hazardous occupations, 178 million and the overall fatal accident frequency rate. These deaths thus cause the loss of a large number of lives and working years. In contrast both work-related cancer and work-related circulatory diseases tend to occur quite late in working life, often after retirement.
- (b) While some factors that contribute to work-related diseases are difficult to eliminate, such as genetic and inherited sensitivities, occupational accidents are all caused by preventable factors at the work place. This has been demonstrated by continuously reduced accident rates in industrialized countries. Many companies and some governments have already adopted *zero accident* targets. This means that practically all accidents can be eliminated by a set of known measures. If all ILO member States used the best accident prevention strategies and practices that are already in place and easily available, some 300,000 deaths (out of total 360,000) and 200 million accidents (out of 270 million) could be prevented, not to mention the savings in compensation payments and other economic benefits.

Injuries caused by accidents lead to fatalities only when a number of contributing factors co-exist simultaneously. Fatal accidents are just the tip of the iceberg. Depending on the type of job some 500-2,000 smaller injuries take place for each fatality. The accident pyramid illustrates the issue (data from R. Skiba, Germany)¹⁰.

⁹ See Health and Safety Statistics highlights 2003-2004, Health and Safety Executive, UK - <http://www.hse.gov.uk/statistics/overall/hssh0304.pdf>

¹⁰ R.Skiba: Taschenbuch Arbeitssicherheit 10, new edition, p 37, also in Training Material of Steinbruchs-Berufsgenossenschaft (StBG), 30853 Langenhagen, Germany

Table 5. The relation of fatal accidents, other accidents and incidents

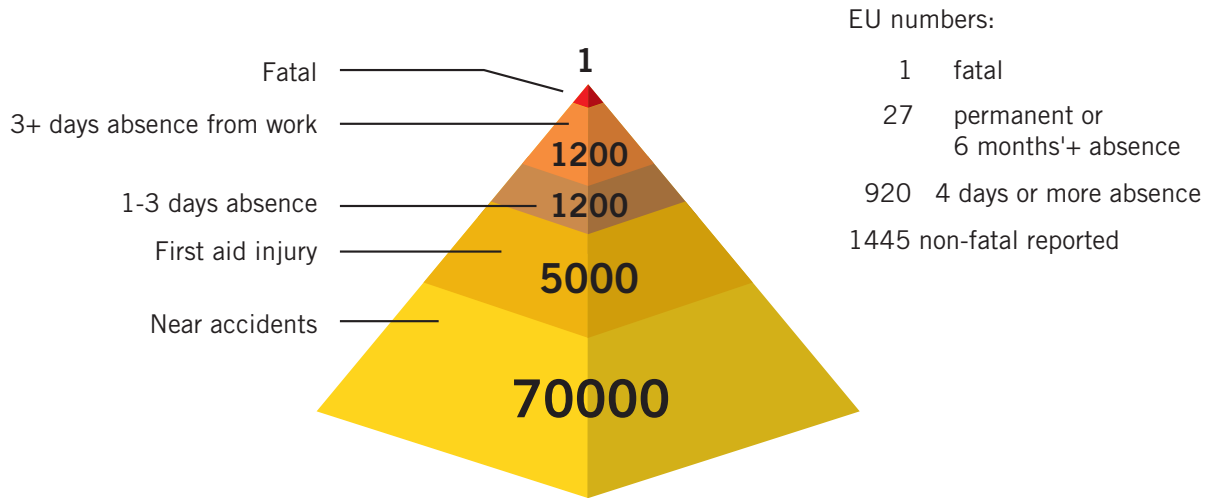
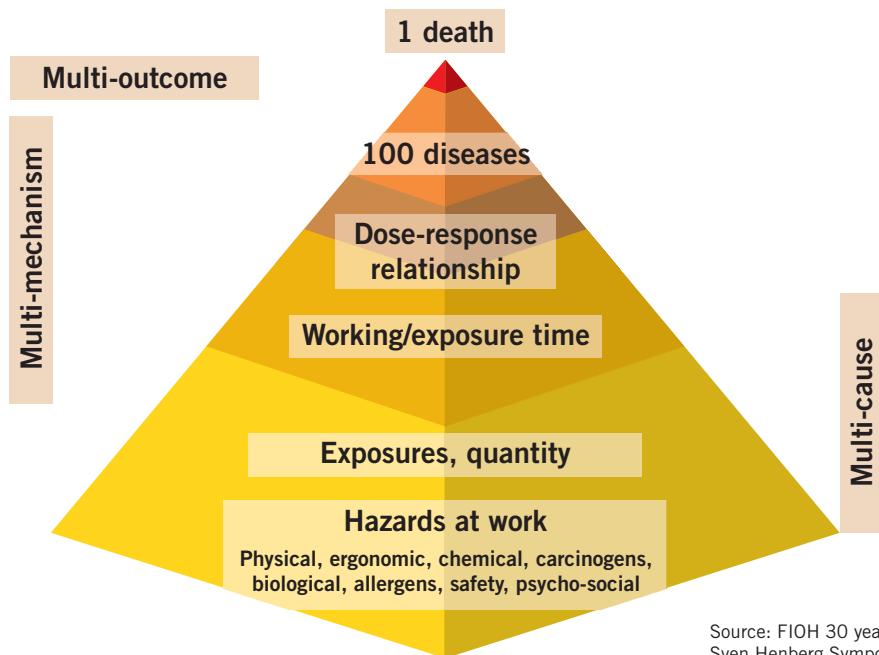


Table 6. Links between hazards, exposures and work-related negative outcomes/diseases



Source: FIOH 30 years of Epidemiology
Sven Henberg Symposium, ILO/SafeWork

Costs of occupational injuries and diseases

The European Union has recently estimated that the costs of occupational accidents in EU15 in the year 2000 was 55 billion euro a year and believes that is likely to be an underestimate. It does not cover costs of work-related diseases that cause 1.6 to 2.2 times more days of temporary incapacity than accidents, while there are 2.4 times more people reporting long-standing health problems at work. It further states that the costs of problems and disability due to work-related diseases may cause at least two times more temporary and permanent incapacity as compared to accidents at work. The ILO has estimated that there are 120.000 (116.000 –124.000 annual deaths in EU15 caused by work related diseases as compared to

some 6000 fatal occupational accidents (see Annex 3 of this report or www.ilo.org/safework). This may indicate that the above costs figures are still radically small if all work-related diseases and problems are taken into account.

WHO has estimated that 37 % of low back pain, 16% of hearing loss, 13% of chronic obstructive pulmonary disease, 11% of asthma, and 8% of injuries are related to work. The ILO has estimated that the attributable fractions are as follows, while in ILO calculations some adjustments were made to compensate different exposure conditions in selected regions:

Table 7. The attributable fractions related work of various diseases. Fractions (%) are based on largely industrial country conditions while application of these fractions was adapted to conditions in selected developing countries

Causes	Attributable fraction	Attributable fraction, men	Attributable fraction, women
Communicable diseases	8.8	4.8	32.5
Malignant neoplasms	8.4	13.8	2.2
Respiratory systems diseases	4.1	6.8	1.1
Circulatory systems diseases	12.4	14.4	6.7
Neuro-psychiatric conditions	3.4	6.6	1.8
Digestive systems diseases	2.1	2.3	1.5
Diseases of the genitourinary system	1.3	3.0	0.4

Furthermore, based on Australian studies related to the work-related attributable fractions of hazardous substances present such fractions listed in Annex 5. The table shows that hazardous substances are a cause of some 20 % of all work-related fatalities and equally a sizeable component of other non-fatal consequences.

All of these attributable fractions give an indication of the magnitude of the costs of work-related problems. Schulte¹¹ has summarized these studies of the Global Burden and attributable fractions in his analysis listing the attributable fractions (attributable risk) from leukemia (2%) to pneumoconiosis (100%), injuries fraction for occupational injuries (of all injuries) was listed as 10%.

The Global Burden of Disease and Injury by Murray and Lopez (WHO/World Bank) estimated that 5 % of the burden is attributed to work in established market economies. This may be also close to the loss of global GDP caused by work-related factors that the ILO earlier estimated to be 4%. Table 8 shows the difference of work-related mortality and the work related Global Burden caused by all diseases and injuries. The share of work related burden increases with the industrial development and reflect the success in eliminating communicable diseases and increasing the role of work-related, usually non-communicable diseases. Accidents are well represented in this calculation while work-related diseases may not have been properly covered. One fatal accident appears to cause an average loss of 14 life years (Murray and Lopez).

¹¹ Schulte P.A.: Characterizing the Burden of Occupational Injury and Disease. JOEM, Vol. 47, No. 6, June 2005, pp. 607-622

