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Sida

Improvement of national reporting, data collection and analysis of occupational accidents and diseases



Programme on Safety and Health at Work and the Environment
(SafeWork)

**Improvement of national reporting,
data collection and analysis
of occupational accidents and diseases**

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Improvement of national reporting, data collection and analysis of occupational accidents and diseases.
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SafeWork/EU project (2009-2012)

The project aims at playing a part in a more inclusive and productive society by seeking to advance occupational safety and health at work in five countries, spread over three regions: Honduras, Malawi, Moldova, Ukraine and Zambia. It aims to incorporate occupational safety and health at the highest level in the national political agenda, integrating it into national development policies, and translating the occupational safety and health national programmes into action at the workplace level.

SafeWork/SIDA project (2009-2012)

The project promotes the improvement of occupational safety and health for all workers through the development of global products addressing the methodological and informational gaps in this field and through the mobilization of national stakeholders towards the implementation of practical measures at national, local and enterprise levels. The outputs of the project include training materials, practical tools and policy guidance to reinforce national and local capacities in occupational safety and health and to help constituents design and implement occupational safety and health policies and programmes.

Preface

Statistics on occupational accidents and diseases are often very incomplete because under-reporting is common and official reporting requirements frequently do not cover all categories of workers – those in the informal economy, for example. To obtain a fuller picture, other indicators also need to be used, such as compensation data, disability pensions and absenteeism rates, although these too provide incomplete data.

This report elaborates the importance and benefits of national reporting of occupational accidents and diseases and how both reporting and data collection systems can be improved, and how the data can be evaluated and analyzed. The correlation between effective reporting and prevention strategies is described. The report discusses the economic dimension of targeted prevention strategies and the needs for reliable data. Practical recommendations are given on how to establish a new system or improve an existing one.

It should be made clear that in analyzing occupational accidents, the attribution of responsibility for the accident should not be the main concern. It is important to study the causes of accidents in order to develop preventive measures. This is especially important given the high cost, in both monetary and human suffering terms, of occupational injuries and diseases.

I hope that this report will serve as a useful source of information, experiences and good practice in developing data collection systems for occupational accidents and diseases. Our intention is not to promote a single and specific system in all countries. We hope that any such system which may be established should not only be able to accommodate all information commensurate to the scale of the problems and the needs for prevention, protection and compensation, but also be effective and sustainable.

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This Paper was prepared by Mr Helmut Ehnes, who is the Director of the Prevention of the German BG RCI (Berufsgenossenschaft Rohstoffe und Chemische Industrie) and has more than 25 years' experience of working in the German system of statutory accident insurance.

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1 Executive summary

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This report focuses on the importance of national reporting of occupational accidents and diseases and how it can be improved, as well as data collection systems and how the data can be evaluated and analyzed.

All over the world it is widely accepted that there is a huge economic benefit to be gained from improved safety and health in the workplace and a reduction in occupational accidents and diseases. In order to achieve this benefit, there is a need for a better knowledge of the true situation of safety and health in the workplace at the enterprise, industry and national levels in order to take the right decisions. Effective risk assessment and control at the workplace require accurate and reliable accident and disease data.

Published national statistics and experience gained all over the world show that national systems for reporting, data collection and analysis are often very poor and do not reflect the real safety and health situation in the country because accidents and diseases are reported more or less by chance.

The reasons for this unsatisfactory situation are varied: sometimes the country lacks a functioning social system, which is necessary for effective reporting and preventive action. Sometimes there is a lack of knowledge about the prerequisites and how to develop an effective system. Sometimes there is a lack of understanding that effective reporting is not simply bureaucracy but delivers the basis for many political decisions that developing economies need to make.

This report highlights the need for and the benefits of an improved and effective national system for reporting, data collection and analysis of occupational accidents and diseases. The correlation between effective reporting and prevention strategies is described. The report discusses the economic dimension of targeted prevention strategies and the need for reliable data. Practical recommendations on how to establish a new system or improve an existing one are given on the basis of the experience in the well-proven German system of statutory accident insurance.

The paper describes the necessary definitions and classifications of occupational accidents and diseases, which need to be fixed in the national legislation. It explains some basic principles, for example, the involvement of social partners and the need for a single integrated system for occupational accidents and diseases.

In order to develop standardized instruments like report forms and coding systems, practical examples from long-established systems are included. This is followed by illustrating the requirements and mechanisms a functioning reporting system needs, including a description of the sources and parties for data reporting. Essential elements for the data analysis process are then explained.

A detailed discussion is given on the use of reliable occupational accidents and diseases data by the employers, employees, industries, the competent authorities and the others who have interest in improving workplace safety and health. The paper concludes by giving a special emphasis on extension of the reporting system to cover workers who are often excluded such as those in small and micro enterprises and in the formal economy.

2 Introduction

Every worker has the right to return from work unharmed every day. This is the humanitarian and social aspect of improvements in workplace prevention and protection.

But there is another aspect to consider: with increasing global competition, productive and successful economies become more and more essential for the well-being of people.

In order to meet these substantial challenges, all over the world political and economic leaders agree that there is an enormous potential benefit to be gained from improved safety and health in the workplace and a reduction in occupational accidents and diseases.

According to ILO statistics, every year there are more than 330 million work-related accidents worldwide, even counting just those resulting in an absence of more than 4 days. A total of 2.4 million people die every year as a result of unsafe or unhealthy workplace conditions. Worldwide, this causes a loss of 4 per cent of global GDP. But this is not only a problem for developing countries. Well-developed national economies also suffer significant economic losses. And in some countries the losses can add up to 10 per cent of national GDP, or even more. These are losses we can no longer afford in times of rapid political change, economic and financial crises and emerging new risks in our workplaces.

But how can we improve this situation? Prevention is the key. Effective prevention driven by all stakeholders reduces occupational accidents and diseases, improves product quality and the economic performance of enterprises and national economies. Effective prevention makes companies more successful and saves lives. This is why, all over the world, prevention is becoming more of a focus for governments, political decision makers, economic leaders and managers, social partners and all stakeholders of society.

This leads us to the next question: what prevention activities are the right ones, and what prevention strategy promises success? A crucial and fundamental part of every prevention strategy is to have a clear knowledge of the number of accidents and diseases, their severity, the causes, and the workplaces and industries where they occur. This means that every country needs a well-functioning and effective system for reporting accidents and diseases and for analyzing the resulting database.

Experience shows that it is not a simple project to set up an effective reporting system, to design the right database, to obtain the required additional data and to draw useful conclusions for national, industry-specific or enterprise-specific prevention strategies and action plans. Some countries have accumulated valuable experience of reporting systems based on their practices over decades. These experiences could serve as models of good practice and have the potential to benefit other countries.

The main aim of this paper is, therefore, to describe the most fundamental elements needed to establish an efficient, functional national reporting system for occupational accidents and diseases and to offer a step-by-step guide to setting up new national systems and improving existing ones. Some essential recommendations will be given as 'Top tips', which can then be

used for orientation or as a checklist. Some best practice examples will also be given in order to demonstrate the practical use of the recommendations.

The information in this report is useful for governments and political decision-makers, workers and their representatives, company managers, labour inspectors, social security and insurance scheme providers, occupational safety and health practitioners and other stakeholders interested in safety and health at work.

3 Definitions and classification

Top tips

1. Clear and easy to understand national legal definitions for occupational accidents and diseases are essential
2. Harmonized national legal definitions facilitate regional benchmarks
3. Use of the ILO definitions and classification as a basis
4. Legal definitions of occupational accidents and diseases are required as a minimum
5. If commuting accidents are included in the reporting system, they also have to be defined
6. Classifications are needed for what is being counted: at least for reportable cases, serious and/or compensated cases and fatal cases.

3.1 The need for clear definitions

In order to derive clear and valid statistics, one needs to define what will be considered as an occupational accident, as a commuting accident, and as an occupational disease. Failure to do so would produce data not ready to be compared and benchmarked, and where a compensational system applies, there would be no basis for fair benefits.

As a minimum, the definition needs to be harmonized within an individual nation; better still is harmonization on a larger scale, such as with groups of countries across the continent. The definition should take due account of the globally accepted ILO standard or other where applicable. At the moment significantly different standards apply throughout the world, which are also affected by different outcomes from handling relevant data (such as whether or not compensation applies), and the economic performance of the individual region.

It is typical to focus first on a nationwide basis, and this is what is primarily discussed in this paper. This is also reflected by the ILO's *Labour Statistics Convention, 1985 (No. 160)* and *Labour Statistics Recommendation, 1985 (No. 170)*, *Employment Injury Benefits Convention, 1964 (No. 121)* and *Employment Injury Benefits Recommendation, 1964 (No. 121)*, *Protocol of 2002 to the Occupational Safety and Health Convention, 1981 (No. 155)*, *List of Occupational Diseases Recommendation, 2002 (No. 194)* and the ILO code of practice on *Recording and notification of occupational accidents and diseases* provide internationally accepted definitions and requirements for reporting and provide countries with ready-to-use tools. Within this national framework, the definitions should be specified by legally binding legislation to ensure a maximum level of obligation.

Aside from nationwide analysis and broader comparisons, many globally operating enterprises also apply accident statistics for internal benchmarking, and to compare their own work safety performance with the index of the relevant industry as a whole; harmonized indices will help in such comparisons.

The outcome of the 16th International Conference of Labour Statisticians (Geneva, 6–15 October 1998), as documented in *Report III: Statistics of occupational injuries*, delivers deeper insight into existing definitions (Chapter 3) while also concluding that national practices in defining occupational accidents and diseases vary considerably throughout the world.

The ILO instruments such as the Employment Injury Benefits Convention, 1964 (No. 121) and its accompanying Recommendation (No. 121), the Protocol of 2002 to the Occupational Safety and Health Convention, 1981 and the List of Occupational Diseases Recommendation, 2003 (No. 194), as listed in Appendix I, as well as the ILO code of practice *Recording and notification of occupational accidents and diseases* as stated above, provide definitions for key terms normally used in reporting such as occupational accidents and diseases, commuting accidents, occupational injury.

The ‘Draft resolution concerning statistics of occupational injuries’ as listed in the appendix to *Report III: Statistics of occupational injuries* by the participants of the 16th International Conference of Labour Statisticians (Geneva, 6–15 October 1998) prove to be practical. Note that defining occupational accidents as any unexpected or unplanned occurrences, as suggested in this paper, also includes unsafe situations that do not necessarily lead to personal injury. While delivering comprehensive information, this method leads to a high number of cases being reported and collected, thus demanding a large amount of resource on the part of reporters and analysts alike.

To simplify the matter, the option is often chosen to not distinguish between ‘occupational accidents’ and ‘occupational injuries’ and to define only those events as occupational accidents which result in fatal or non-fatal injuries.

Occupational accidents are accidents arising out of or during the course of work. Accidents are time-wise limited events with an outer impact to the body resulting in injury or death. Accidents while commuting directly to and from the workplace are also covered.

3.2 Classification of occupational accidents

It is advisable to distinguish accidents according to their severity:

Reportable accident (severity category 1)

While counting each individual accident would increase the informational value of statistical data, this method often proves to be impractical, given the resources and time required to report and enter the data. It is thus recommended to define a threshold for reportable accidents. German experience over decades showed that defining accidents leading to an absence from work of more than three days (not counting the day of the accident) provides a good balance between comprehensive and significant data on the one hand and a feasible use of resource for reporting and processing time on the other. Other countries running well-proven reporting systems use similar definitions.

Compensated or serious accident (severity category 2)

Where a compensation fund is available, another category is counting those accidents which lead to compensation, such as with pensions. Accidents from this category also represent more serious accidents.

Fatal accident (severity category 3)

Death does not always occur immediately after an accident; depending on the extent of injury, the injured person sometimes dies after a period of medical treatment at the hospital. What cases should be counted as death resulting from an accident? While some countries classify all cases with death occurring up to one year after the accident as fatal, this method delays the typically annually collected statistics. Some countries define a maximum period of 30 days; this has proved to be practical and acknowledges the vast majority of fatal accidents, with chances of recovery increasing if the patient survives the first 30 days after the injury. If the victim of a serious work accident dies more than 30 days after the accident, the case would then be counted in the 'severe' category. This kind of definition is needed because new entries to the database have to be closed and the database frozen before starting analysis and publishing statistical data.

For prevention purposes, distinguishing severity levels is an important factor. Aside from the previously suggested levels (reportable accident/compensated accident/fatal accident), there are various finer options of defining scales, such as:

■ By consequence

Figure 3.1 shows various levels of incidents and accidents with increasing consequences for human beings.

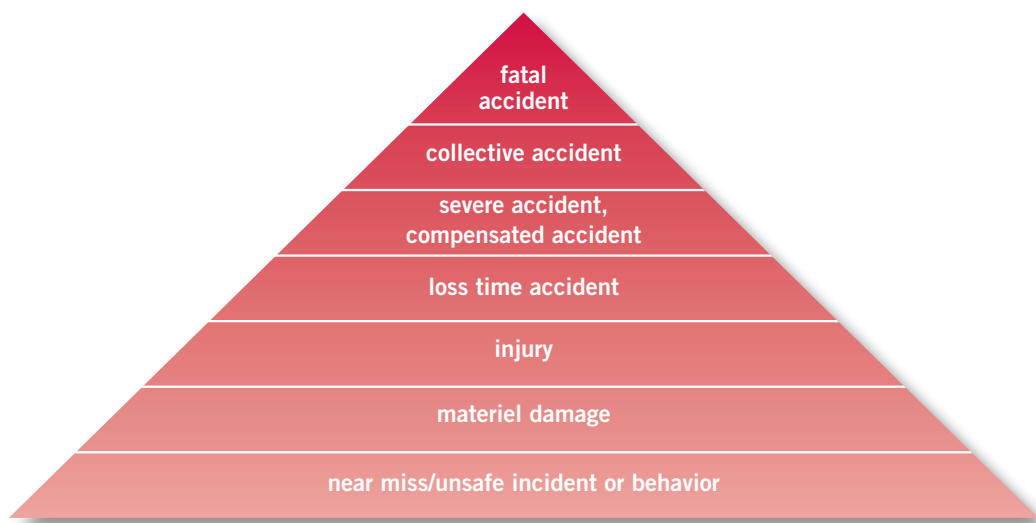


Figure 3.1 Levels of incidents and accidents.

■ By lost work time

This method serves as a good indicator of severity, because it is easy to determine and allows detailed grading (most extreme case, category 'one day', category 'two days' ...). It also allows reportable accidents (more than three days lost) to be distinguished from non-reportable accidents (three or less days lost).

The challenge of how to count lost work days in the case of a fatal accident can be met by calculating the days the victim of the accident would have worked until average retirement age, or by applying a constant amount of days.

■ By type of medical intervention and consequence

Figure 3.2 shows various levels of medical intervention and consequences of accidents with increasing effect on health for human beings. While delivering important information, this method is not always suitable because the consequences will not always be evident at the time of the accident.

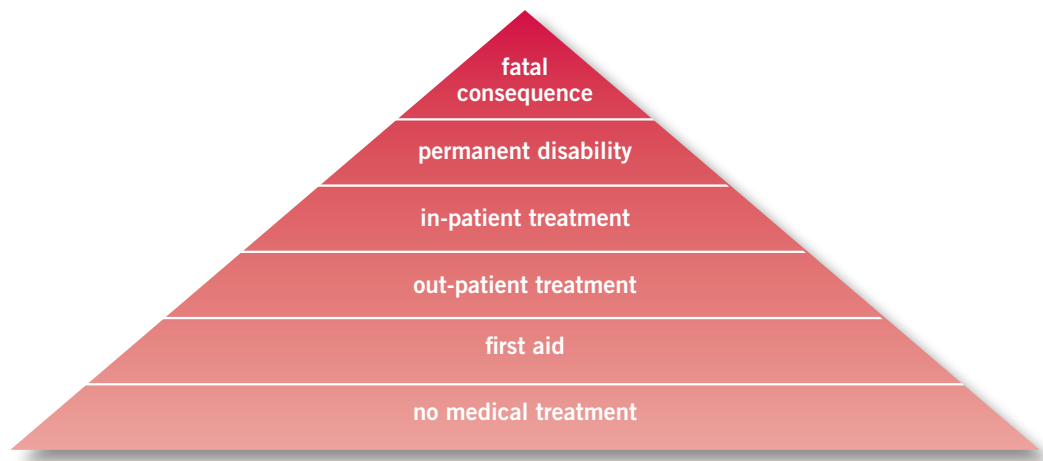


Figure 3.2 Levels of medical intervention.

3.3 Occupational diseases

As with the previously discussed occupational accidents and commuting accidents, occupational diseases also have to be defined within the framework of national legislation.

The ILO's *List of Occupational Diseases Recommendation, 2002 (No. 194)* calls for "a national list of occupational diseases for the purposes of prevention, recording, notification and, if applicable, compensation should be established by the competent authority, in consultation with the most representative organizations of employers and workers, by methods appropriate to national conditions and practice, and by stages as necessary."

This Recommendation contains a list of occupational diseases which was updated in 2010 and should at least be part of each national catalogue. The national list should be revised periodically to evaluate whether the state of medical science calls for added diseases to be included. The list should be considered non-exhaustive, allowing for non-listed diseases to be recognized as an occupational disease if the work history of the person suffering from the respective disease indicates the condition has been caused by working conditions.

The German practice of adopting the ILO definition in national legislation is proven and reliable. It defines occupational diseases as:

- diseases acquired during work; and
- according to medical science having been triggered by exposure at work significantly higher than that of the average population; and
- classified by legislation as such.

A national list of all occupational diseases has been defined by German legislators. Diseases not included can be compensated in the same way in Germany if according to the latest medical scientific knowledge these diseases meet the other conditions listed above.

Statistics should take into account the following categories:

- suspected cases of an occupational disease;
- confirmed cases of an occupational disease;
- compensated cases of an occupational disease; and
- occupational disease with fatal consequences.

In assembling and interpreting statistics, one has to keep in mind that many occupational diseases, such as those due to noise at work, crystalline silica or asbestos dust, only show their onset years or decades after exposure has ended. Suspected, confirmed or compensated cases therefore often reflect the workplace situation of many years ago and don't necessarily reflect the current state of health protection at work.

Special care is needed when interpreting reported suspected cases, as the ratios can significantly vary from those of confirmed cases. Examples are noise-induced occupational diseases in contrast to degenerative hardness of hearing or those caused by environmental noise outside work.

4 *Basic principles of effective reporting, data collection and evaluation*

Top tips

1. Both employers and employees to take an active role in the system
2. The social partners need to be involved when designing a new system
3. Build up a single integrated system for occupational accidents and diseases
4. Hand over responsibility to one independent institution with a vital interest in high-quality data, e.g. the statutory work accident and disease insurance scheme
5. Use clear definitions of what has to be reported
6. Concentrate on lost time workplace accidents, serious accidents and fatal accidents in order to make it manageable
7. Cover all industries and sectors, and all different kinds of work
8. Think about the foreseen use and benefits for prevention purposes when designing the reporting scheme
9. Follow the 'eleven golden rules'

When designing a new system for national data collection and analysis of occupational accidents and diseases, or improving an existing system, the following basic principles and recommendations should be discussed and taken into account.

4.1 Involvement of the social partners

Employers and employees have a vital interest in reliable data on work-related accidents and occupational diseases. Therefore both employers and employees, and their respective representatives should be involved in the design process from the very beginning and should be suitably involved in the system itself. Experience and good practice can be collected. Employers and employees are the ones directly concerned with accidents and diseases and therefore must take an active role.

4.2 Design of the reporting system

When designing a new system for national data collection and analysis of occupational accidents and diseases one should think about all relevant aspects which guarantee a sustainable system. Many fundamental questions need to be answered, for example:

- Coverage of the system: will it cover both accidents and diseases?
- Who will run the system?

- Can the system be connected, run and financed by social accident insurance?
- Is there another social body or fund able to run the system?
- Who will use the data gathered by the system?
- What kind of information will be expected by the system?
- What can be done to motivate employers to report?
- What kind of control mechanisms can be installed to support the reliability and quality of the collected data?
- What kinds of reports (national, sectoral, company level) need to be delivered by the system?
- Will the data also be used for prevention as well as for compensation and rehabilitation purposes?

It is not recommended to have two systems, one for occupational accidents and another for occupational diseases. It is much better to establish one comprehensive system for occupational accidents and diseases and commuting accidents. In view of the present practice in many countries that information on accidents and diseases is often collected by and reported to different ministries at a national level, the best way to organize reporting, data collection and evaluation is to assign the task to a single independent body, controlled in a tripartite way: by the government and by the social partners. Another advantage is that the system can work, be developed and optimized without being influenced too much by political changes, e.g. changes in the number and scope of ministries.

4.3 Institutional and administrative arrangements

As stated in Chapter 3, a single independent institution should be in charge of collecting all data from reported occupational accidents and diseases. Of course it depends on different national situations and the state of the social system which body or agency offers the best solution. Before making the decision, it is worth analyzing which organization is in the best position not only to obtain the best data from the workplaces, because they will have an interest in continuously improving the quality of the data, but also to provide the best information services for those who need the data for workplace safety and health.

In some countries such as Germany, responsibility for data collection is handed over to the statutory accident insurance institutions, because it is vital that these organizations obtain correct data in order to fulfil their legal tasks. First of all, these accident insurance institutions are mandated for all rehabilitation and compensation activities following occupational accidents and diseases. The company report on these cases is fundamental to fulfilling this task. During the process of case management these organizations have the established procedures and mechanisms to investigate the accidents and diseases according to their causes and to classify them according to severity (reportable cases, cases where pensions had to be paid, fatal cases).

Furthermore, the information is indispensable for the second legal task of statutory accident insurance: to care for prevention activities 'by all suitable means'. To meet this obligation about 10% of the annual budget is spent on a wide range of prevention measures, e.g. prevention campaigns, training, medical check-ups, research, certification of machines and safety management systems and inspection services.

Finally, statutory accident insurance institutions are in charge of setting up risk classes for the different industrial trades in order to calculate the contributions for every single enterprise in order to finance the system: prevention, rehabilitation, compensation and data collection and analysis.

In order to motivate employers to report cases of occupational accidents and diseases, beside their legal obligation to report and possible legal consequences, there is another mechanism installed: a two-way reporting system. In addition to the report form submitted by the employer, medical doctors and hospitals involved in the treatment of injuries will notify the statutory accident insurance about the case when filing the medical bill. This way, even in cases where the employer forgets to report, the information will be available and will find its way into the database. The workers and their representatives need to report an accident at work to the employers. In accordance with the national law and practice, they can also report to the competent authorities and the statutory accident insurance.

A copy of the report form will be sent to labour inspection in order to have the information on accidents and diseases available for the planning of inspection activities as well.

In Germany, all the relevant information will eventually be delivered to the Federal Ministry of Labour and Social Affairs, in order to publish the annual national report on safety and health at work.

Every system for reporting, data collection and evaluation needs clear definitions of what has to be reported and what detailed data are expected from those responsible. First of all, there is a need for clear and easy to understand statutory definitions for occupational accidents and diseases.

As far as occupational diseases are concerned, there should be a national list indicating the specific illnesses to be recognized as occupational diseases. This national list should be regularly reviewed and updated to take into account the up-to-date list of occupational diseases annexed to the ILO *List of Occupational Diseases Recommendation*, 2002 (No 194).

Regarding the reporting of occupational accidents to the competent authority, many countries use definitions that exclude minor accidents from the duty to report, so only those requiring more than three days of work absence have to be reported. In contrast, occupational accidents requiring less than three days of work absence are regarded as non-reportable accidents. The reason for this kind of regulation is to use a clear definition, to reduce the overall number of reportable accidents, to reduce the amount of bureaucracy for employers and to increase the acceptance for the duty of reporting. The resources required for data entry and analysis can also be reduced. For these reasons, it is recommended to focus on more severe cases when collecting and evaluating, such as on accidents leading to a loss time of more than three days – benefiting companies, labour inspectorates and, where available, insurance schemes. For prevention purposes at the enterprise level, the employer still needs to record the accidents which are not required for reporting to the competent authority and take measures to protect the workers against these accidents.

Of course the most comprehensive way would be to collect every single accident, but this is not always practical at the national level. Priority is on the recording and reporting of legally notifiable cases. Within German social accident insurance, all treatment costs are covered by accident insurance, which means it receives information even about minor accidents by default, in case they lead to any treatment expenses, although an official accident report is not expected from the company in these cases.

Standard forms are of course recommended in order to get comparable information on the reportable cases.

4.4 Maintenance and improvement of a comprehensive national database

Every system for reporting, data collection and evaluation should cover not only high-risk industrial sectors but all sectors of economic activities including non-commercial public services, and all sizes of enterprises, including self-employed persons. For developing and emerging countries in particular it is most important to include self-employed persons, craftsmen and agricultural workers in the reporting strategy.

Because there are risks similar to those at workplaces, many countries also include children and students in all educational establishments in their reporting system in order to get a complete picture of the accident situation in the country.

New requirements and challenges to the reporting and data collection systems are arising from recent changes in modern forms of labour, e.g. contract work, loan workers, self-employed, freelancers, migrant workers, or mobile and teleworkers. New concepts are necessary to motivate these groups of workers to report accidents and diseases. The better these persons are covered by the social accident and disease insurance scheme, the better the chance of having incidents affecting this group reported, enabling their workplaces to also be covered by prevention activities.

Figure 4.1 shows one possible approach based on ‘eleven golden rules’ to building up or improving a national system for data collection and analysis of occupational accidents and diseases.



Figure 4.1 The ‘eleven golden rules’.

5 Standardized instruments for data reporting

Top tips

1. Standardized instruments and forms are indispensable
2. Report forms must be simple and clear
3. Data on the victim, on the employing company, on the injury or illness and on the specific work-related accident or occupational disease are required as a minimum
4. Detailed investigation by labour inspectors requires more detailed investigation forms
5. Electronic reporting systems should be installed in order to reduce paperwork and the administrative burden
6. Standardized coding is essential for analyzing the collected data
7. Coding systems should be designed to be as simple as possible, but as complex as necessary

Standardized instruments and forms will minimize the effort of reporting and ensure comparable data.

Reports will serve as a basis for:

- general statistical analysis;
- derivation of targeted preventive intervention;
- compensational administration by compensation funds and insurers; and
- more detailed investigation, such as by labour inspectors in case of occupational accidents and diseases.

5.1 Report forms

Designing forms should ideally lead to identical forms for nationwide use for each type of case (occupational accident, commuting accident, occupational disease), taking into consideration the individual means and information level of different stakeholders (employer, manager, worker, physician, etc.).

Before defining data fields, it is of utmost importance to first decide what the data will be used for (statistics, prevention, compensation). Depending on the purposes of the data, which will vary among individual countries, mandatory and optional parameters for reporting should be specified.

Questions that might arise are, for example: “What target group needs to be reached by the prevention message and campaign? Young people, migrant workers...?”. These factors can be included when designing the message if parameters such as birthday/age/nationality/ethnic group/level of literacy are known; the reporting can be designed accordingly considering the

background of the target audience, with little or no text but illustrations, translated into different languages, etc.

The more fields are defined, the more options will be available for evaluation; at the same time, the administrative burden on reporters is increasing, making them less likely to deliver comprehensive and correct data; in the most extreme cases, methods perceived as too complex will lead to under-reporting or non-reporting. Keeping this in mind, it is important to find the right balance between scope and ease of use.

Reporting forms should include simple and brief instructions on:

- how to fill out the form;
- what to do with it (distribution, record-keeping instructions); and
- the definition of each field where necessary.

Annex 2.1 shows an example based on the instructions included in the report form used in Germany.

Leave the coding to professionals, this would be an additional burden on responsible persons in businesses, and higher quality data will be achieved if this is left to trained personnel.

In all cases, consider the obstacle of illiteracy of those who need to report. This could be dealt with by establishing a focal point to accept reports in oral form.

A common requirement of all types of report forms is personal data of the person injured or suffering damage to health.

■ **Data related to the sufferer**

This would typically include full name, place of residence, birth date and, where applicable, unique ID. These parameters will allow first and foremost identification, and, where necessary, the option to contact the person whose case is being reported and the initiation of compensation. Where a compensation system applies, the marital status and the number of children are relevant factors, these being potential beneficiaries. Data fields such as sex, age, nationality, profession, qualification, work experience, and type of work contract (permanent or temporary, contractor, self-employed, etc.) will deliver valuable insight into risk groups and fields for efficient preventive action.

■ **Data related to employer**

Next to the full name and address of the affected business, the industrial trade (such as mining, fishing or farming) is a vital element for accident and disease ratio analysis and should always be considered.

5.1.1 Report forms for occupational accidents and commuting accidents

Occupational accident report by employer

In addition to the aforementioned data range, these will contain accident-specific data:

- site/location of occurrence;
- brief description of what happened;

- accident consequence:
 - type of injury
 - body parts injured
 - ability to work (suspended/continuation of work)
 - fatal accident (yes/no)
- object causing/involved in accident;
- movement of object;
- movement of person;
- data of witnesses; and
- first responding physician/hospital/rescue team.

Annex 2.2 shows a comprehensive, but not exhaustive, list of potential parameters documenting accidents and incidents at work.

The severity level can be included at this point, although this depends on the locally defined scale. Where the amount of lost time is defined as the deciding factor, this will not be clear at the time of instant reporting. Also fatal consequences can occur some days after the accident, and the same way resulting (permanent or temporary) disabilities will more than likely not be known to the reporting person right after the accident. It is thus recommended to add or to correct this important parameter at a later time to the case, not at the initial reporting, unless factors such as instant death on the scene of the accident have been recorded.

The employer or manager will have a deeper insight into business-related factors, but a less detailed insight into the medical consequences.

Annex 2.3 shows an example based on a report form used in England.

Annex 2.4 shows an example based on a report form used in Germany.

Occupational accident report by medical doctor/hospital

In addition to the items listed above, other parameters such as specific diagnosis, therapy suggested or applied, and projected time loss may be included in the reporting for compensation purposes.

The medical personnel will have a deeper insight into the diagnosis and medical consequences, and the data obtained in this way will complete the data basis derived from company reports.

For medical data, medical confidentiality should be observed.

Instant brief report on serious accidents

On events with severe incidents such as fatalities, collective accidents (more than one person severely injured), serious accidents, hazards to the public, a lean and immediate reporting method should be established to enable competent authorities such as the labour inspectorate for imposing immediate preventive and protective actions.

Annex 2.5 shows an example of an instant brief report on serious accidents as used in Germany.

The range of parameters would be designed according to the individual means of intervention, but should in any case include the nature of the accident, number of affected people, and the severity grade (number of victims fatally injured, severely injured, what type of hazard to the public, how many involved, actions taken).

The mode of transfer will depend on the available infrastructure. Ideally it should be a phone number with 24-hour and 7-day week standby.

Serious accident investigation form for labour inspectors

Typically, labour inspectors would investigate cases such as:

- fatal accidents;
- severe accidents leading to long-term disabilities;
- severe accidents leading to questions of legal responsibilities (depending on the legal scheme for responsibilities); and
- collective accidents.

The range of documentation would basically match the ‘Occupational accident report by employer’, but would be more exhaustive and detailed; in-depth insight into technical processes will allow for a thorough analysis of cause and consequence.

Annex 2.6 shows an example for an accident investigation report as used by labour inspectors in Germany.

5.1.2 Report forms for occupational diseases

All report forms for occupational diseases should aim to clarify whether the suspected case is to be confirmed and recognized as an occupational disease. Thus the suspected cases are a useful cursor for further action, but the number of proven and accepted cases is much more relevant.

Occupational disease report by employer

In an employer reporting form for a suspected occupational disease, two factors need to be considered:

- The employer typically lacks deeper insight into medical aspects; results from medical examinations will be confidential in most cases and thus not known to the employer.
- The relevant exposure and work history can only be known to the employer. If there have been previous jobs under different employers, these employers should be contacted for the previous exposures.

Thus, an employer’s report on this matter may typically only initiate further investigations.

In addition to parameters of the person complaining on health issues and data on the current job situation as described above, this type of report should contain:

- symptoms as described by the individual;
- hazards associated with the job;

- description of hazards from prior job contracts as far as an interview with the individual will reveal;
- results of medical examinations (such as periodic medical screening).

Annex 2.7 shows an example of a report form for cases of indications of an occupational illness as used by companies in Germany.

Occupational disease report by medical doctor/hospital

In addition to data provided by the employer on a suspected case of occupational disease, a report generated by medical personnel will provide more comprehensive information in accordance with national law and practice on the reporting and on medical confidentiality.

It should, in addition to data supplied by the employer, include:

- the patient's medical history (as far as relevant to discussed symptoms);
- contact information of prior treating physicians (as far as relevant to discussed symptoms);
- medical results/diagnosis;
- description of diagnostic methods applied or suggested; and
- curative methods applied (treatment, therapy, medication prescribed, specialists patient has been transferred to).

Occupational disease investigation by labour inspectors

With many occupational diseases showing long latency times, it is quite common that the cause of an occupational disease is not the consequence of the exposure from only one, but several jobs during the work history of the employee. This requires studying the complete work history, which often has to be carried out by labour inspectors.

Where a relevant compensation infrastructure exists, the responsible compensation body will typically develop forms for investigation purposes to systematically cover all relevant aspects.

5.1.3 Electronic reporting systems

Electronic reporting can be used in parallel with or in addition to paper reporting. The advantages are:

- fast, real-time data exchange;
- easier to apply and more economical than paper reporting;
- potentially direct input into databases, facilitating quality assurance; and
- direct feedback to sender (such as instant confirmation).

There are three technical platforms with almost identical underlying technology:

- Internet: a network available to anybody.
- Extranet: a network available over the Internet, requiring authentication to access.
- Intranet: a closed network within a corporation.

Additionally, there can be the option of data transmission by e-mail, and individually set up networks. E-mailing reports is an option, but requires additional tools for secure data transmission, and the range of data transmitted this way is typically not directly importable into databases, which requires human interaction – thus there is a time and cost factor as well as a potential source of transmission errors. Thus, direct input via an intranet or extranet infrastructure is recommended (intranet with corporate networks).

Electronic reporting by means of an internet, extranet and intranet infrastructure follows the same guidelines as reporting by paper copies. In this respect, two important factors need to be considered.

Confidentiality

Data on occupational accidents and diseases is typically confidential, affecting businesses and individuals (including medical data). Thus, a secure connection should be made available, such as at the time of creating this guideline via Hypertext Transfer Protocol Secure (https). The technical parameters for this are changing rapidly, so this report will not discuss technical aspects in detail.

Usability

The system will have to show ease of use, clear user interfaces and clear user feedback in order to work fast, properly, free of failure, and also to find acceptance with its users. The field of usability changes with the rapid development of available technology, which calls for the involvement of experts of this particular field when setting up a system.

5.2 Standardized coding of relevant data

The analysis and evaluation of collected occupational accidents and diseases requires standardized coding.

Coding helps to identify important aspects such as major causes of accidents and is the prerequisite to deriving any efficient prevention strategy. Coding ensures comparability and allows for significant benchmarking.

5.2.1 Systems of coding

Where possible, existing international classifications should be used to save resources. They can be refined as necessary, according to needs. Taking advantage of internationally established systems also allows comparison of results.

The range of codes will basically match the parameters defined in the report form, such as trade, occupation, injured body part, etc.

Existing classifications include, for example:

- International Standard Industrial Classification of all Economic Activities
- International Standard Classification of Occupation [ISCO 88] (Occupation of the Victim)

- Nomenclature statistique des activités économiques dans la Communauté européenne (NACE) (Economic Activity of the Employer)
- European Statistics on Accidents at Work (ESAW) Classification System for Type of Injury
- European Statistics on Accidents at Work (ESAW) Classification System for Part of Body Injured
- European Statistics on Accidents at Work (ESAW) Classification System Working Process
- European Statistics on Accidents at Work (ESAW) Classification System Working Environment
- European Statistics on Accidents at Work (ESAW) Classification System Specific Physical Activity
- European Statistics on Accidents at Work (ESAW) Specific Physical Activity Deviation
- European Statistics on Accidents at Work (ESAW) Specific Physical Activity Contact – Mode of injury

See Appendix IV for web resources.

Simple or complex

A balance needs to be struck between efficient entry and comprehensive data. It will not be possible to code every detail. For example, it is not feasible to classify each forklift truck involved in an accident down to the exact model and full type of mounted equipment while determining if there are any other models of identical construction. Aiming to do so would require the full information to be reported on the one hand; it then would require coding charts of tremendous detail. This would be a burden on both the reporting and the coding party, and would not give a sufficient additional level of insight.

If there is a safety deficit on a certain type of machine or equipment by a certain maker, it will also surface with accident investigations undertaken by labour inspectors and can be systematically pursued from there.

In most cases it will be sufficient to define a system with levels such as: Transport > Vehicles > Forklift Trucks.

Annex 3.1 shows a list used for classifying machines and equipment within the German aggregates industry.

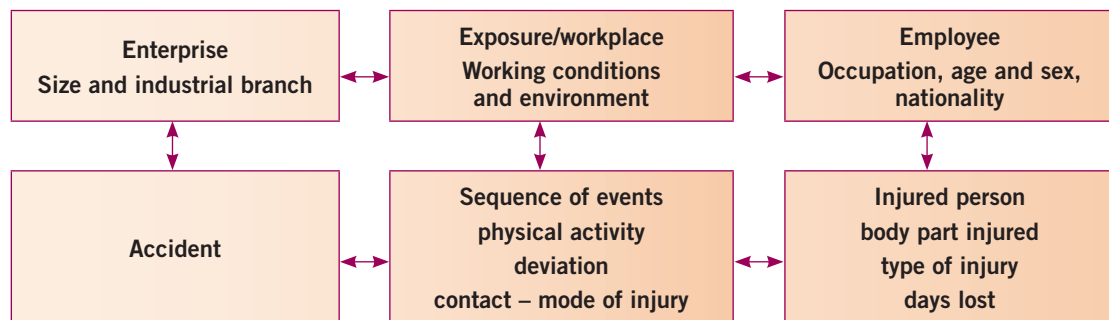
If a very particular part of an industry is covered, there is the option for more narrow definitions. For a national analysis, the structure mentioned above will be sufficient.

5.2.2 Processes of coding

The reported data will have to be transferred into a database. Full text cannot be systematically analyzed by software, a catalogue is needed to form clear and distinguished groups of items – this is the basis for the coding process. This task should be assigned to professionals doing

this on a regular basis in order to achieve constant and homogeneous, thus comparable and significant results. The coders should have a manual to hand, including the latest definitions and coding tables. The catalogues should be regularly revised and updated.

The data fields listed in the accident report should be assigned a code in accordance with the catalogue. Parameters can be, among others:



6 Systematic data reporting and collecting

Top tips

1. Analyze all potential sources and parties in the country that can play a systematic role in the reporting process
2. Employers are the first choice
3. Occupational accident and disease insurance schemes, medical doctors and hospitals should be systematically involved
4. Create a legislative framework for reporting and collecting
5. Design a redundant system
6. The 'perpetrator pays' principle supports better data
7. Non-reporting should be sanctioned
8. Avoid complicated reporting obligations – keep it simple

A systematic approach in data collection can ensure the comparability of the data to be collected thus reducing mistakes in reporting and analyzing. This, if well designed, is a positive factor for efficient reporting. It can also be an obstacle for reporting if the designed forms are too complex.

6.1 Legal requirements for systematic data reporting

To obtain significant data, a complete knowledge of all accidents occurring at the workplace and all occupational diseases diagnosed is needed. The basis for this should be a national legislative framework, obligating major stakeholders to systematically report all incidents, and defining the minimum range of data to be recorded.

■ Legislative framework

Primarily, the legislative framework should address employers, doctors and hospitals, with these being typically the first parties to gain information. Also, addressing employees is recommended to fill information gaps, such as in cases where a business failed to report, did not receive information, and where no professional medical intervention has been applied.

■ Reporting framework

Data should be reported to a designated institution, which should be non-commercial by nature. Depending on the individual structure of the country, this can be the insurance body for occupational accidents and diseases, with a copy of each report being sent

to the labour inspectorate among other purposes for samples during inspections. Where this does not apply, data can be collected at the Ministry of Labour or a central unit of labour inspection. In any case, it should be an institution that will react to incidents such as with preventive measures, and/or compensation and rehabilitation. The law and regulations should precisely define what cases are mandatory to report, who are obliged to make the report and who should receive the report. Deadlines should be specified for such reports, for example ‘no later than three days after the incident’ or ‘instantly in case of fatal accidents’. It is recommended to define different deadlines for different grades of severity; fatal incidents and those causing danger to the public must be reported immediately.

6.2 Sources and parties for data reporting

Accidents at work, commuting accidents and occupational diseases are often reported by a variety of stakeholders. Thus, many of the parties involved are able to deliver data and need to be involved in the reporting process if comprehensive and significant data is to be gathered.

The following stakeholders should be considered potential sources of relevant data when defining or optimizing a system of reporting to ensure that one gains reliable knowledge of all relevant incidents. In designing or improving any reporting system, the most appropriate stakeholders have to be chosen from this portfolio and given legal obligation with respect to reporting responsibilities.

Well-proven systems require initial reports on occupational accidents and diseases by employers and in parallel by medical doctors. Information from all other stakeholders will be used as additional information in order to validate the received information.

■ **Employers**

Employers are the very first resource for reporting. They are typically directly involved in accident scenarios and the investigation process. It is their duty to report occupational accidents and diseases to the designated body themselves or to organize reliable reporting. Accidents at work directly affect business performance and it is vital for employers to establish the cause. In many cases, the employer is responsible for accidents in the production facility. While doctors would base their report on a qualified diagnosis, the employer would typically base their report on technical descriptions of what has happened.

■ **Occupational accident and disease insurance**

Insurance carriers, statutory or private, are an important source of data. Because of the nature of their business, they gather comprehensive information on each reported case filed to result in compensation for medical expenses, rehabilitation, pensions, and further benefits.

■ **Labour inspectors**

Labour inspectors will typically investigate the more severe accidents and occupational diseases. Moreover, periodic visits to the enterprise’s facilities and sites can give an

insight into accidents and diseases that were previously not reported or under-reported. Employee and manager interviews in aspects of occupational safety and health are also a valuable factor.

■ **Social insurance carriers (health insurance, old age fund)**

Aside from occupational accident and disease insurance, health and old age fund carriers also receive relevant information on the consequences of occupational diseases, especially those with long latency times such as silicosis, and also the long-term effects of work-related injuries.

■ **Doctors, nurses, hospitals and medical personnel**

Appropriate first-hand information can be obtained from health professionals performing medical treatment after accidents and diagnosing potential work-related causes, such as hospitals or doctors' offices.

■ **Compensation funds**

Where compensation funds other than carriers of the social insurance system are available, these will be another potential source of relevant data on cases.

■ **Employees**

Employees are directly affected by accidents and injury to health and by the workplace prevention and protection measures. Thus, employees are a valuable source of information with respect to their individual situation as well as in matters of their co-workers.

■ **Trade unions**

The well-being of employees is a key concern of the trade unions, including social aspects and matters of occupational safety and health. Very often trade unions collect data on occupational accidents and diseases in their respective industry.

■ **Police officers and emergency services**

Law enforcement agencies and emergency services are the first point of contact for help when accidents occur and are involved in workplace investigations for the causes of severe accidents in many countries. They are also involved in acts of physical violence at the workplace and accidents involving members of the public. Negligence and responsibility are also considered by public prosecution.

6.3 Prerequisites and recommendations for an efficient reporting system

As described in the sections above, a vital element for successful data reporting and collection is the involvement of all stakeholders and forming a legal obligation to report in a comprehensive, systematic and quality assured way. This legislative framework has to be communicated clearly, simply, and concisely to everybody who is affected by this system.

■ **Design a redundant system**

If more than one party is obliged to report it will probably produce redundancy. This is acceptable for the sake of accurate and comprehensive data, but requires clear identification of each accident or disease to avoid double counting. The best identification will be unique elements such as social security numbers or personal IDs; where not available, suitable combinations of name, birth date, location and date of accident, and precise employment information will serve the purpose.

■ **Involve the social accident insurance system**

A structured system of social security/social insurance with universal coverage will ensure comprehensive and valid data, given that all cases with any type of benefit – such as coverage of medical bills, rehabilitation cost or compensation – will be on record; this basis will form an effective safeguard against non- or under-reporting. This goes even more for a system of social security spanning aspects like pension funds, health insurance, and occupational accident insurance; each link will potentially deliver data on occupational accidents and diseases.

■ **Use the ‘perpetrator pays’ principle**

A clear definition of cost-bearing parties will help to ensure comprehensive data. The vast majority of accidents at work and while commuting, as well as occupational diseases, leads to direct costs for medical intervention and in some cases to compensation and pensions. A ‘perpetrator pays’ principle will not only motivate all stakeholders to imply and enforce effective prevention, but also offers a basis to derive statistical data in respect of accidents and occupational diseases by linking claims to countable incidents. Systems of mutual financing, such as compensation funds or accident insurance funds, distribute the burden of accident and disease-related costs to the group of covered stakeholders as opposed to systems where individual perpetrators pay all costs resulting from a particular incident. Such communities of policy holders also offer a better basis for statistical accident and disease data and reduce the risk of non- or under-reporting, given that individual responsibility of unique enterprises can lead to managers aiming to avoid economic consequences by not reporting the full extent of an incident, or not reporting at all.

■ **Sanction non- or under-reporting**

Non- or under-reporting should be sanctioned, as it will narrow the basis of relevant data and thus negatively influence effective prevention; what is more, non- or under-reporting will cut workers off from claims after accidents and diseases related to their job.

■ **One face to the customer**

To avoid the obstacle of multiple institutions reporting on the occurrence of occupational accidents and diseases, a system offering ‘one face to the customer’ is the most suitable. A fragmented range of institutions, e.g. labour and health inspectorate, insurance carriers, authorities of individual industrial trades, law-enforcing institutions and many more, will slow things down and make it very difficult especially for small and medium enterprises and stakeholders of informal economies. Exceptions can be defined for really severe

incidents such as fatal accidents, accidents affecting a high number of workers and/or the public, thus requiring immediate action to be taken possibly by different enforcing and supervising bodies.

6.4 Collection of information on unsafe conditions and near misses at enterprise level

A reporting tool for unsafe conditions and near misses at the company level will deliver valuable insight into situations that could have led to an accident and should be included in the focus of prevention.

Whether a falling object causes fatal injuries or near misses without leaving any damage depends on many factors, but delivers the same insight: a fatal risk occurred and needs to be prevented.

While fatal accidents (as well as other severe accidents) are typically thoroughly investigated and analyzed, near misses are nearly always only known about by direct witnesses.

The more severe an accident, the more is probably known about it; the less severe an incident, the less is normally known. This leads to a gap in a very important insight, as shown in Figure 6.1.

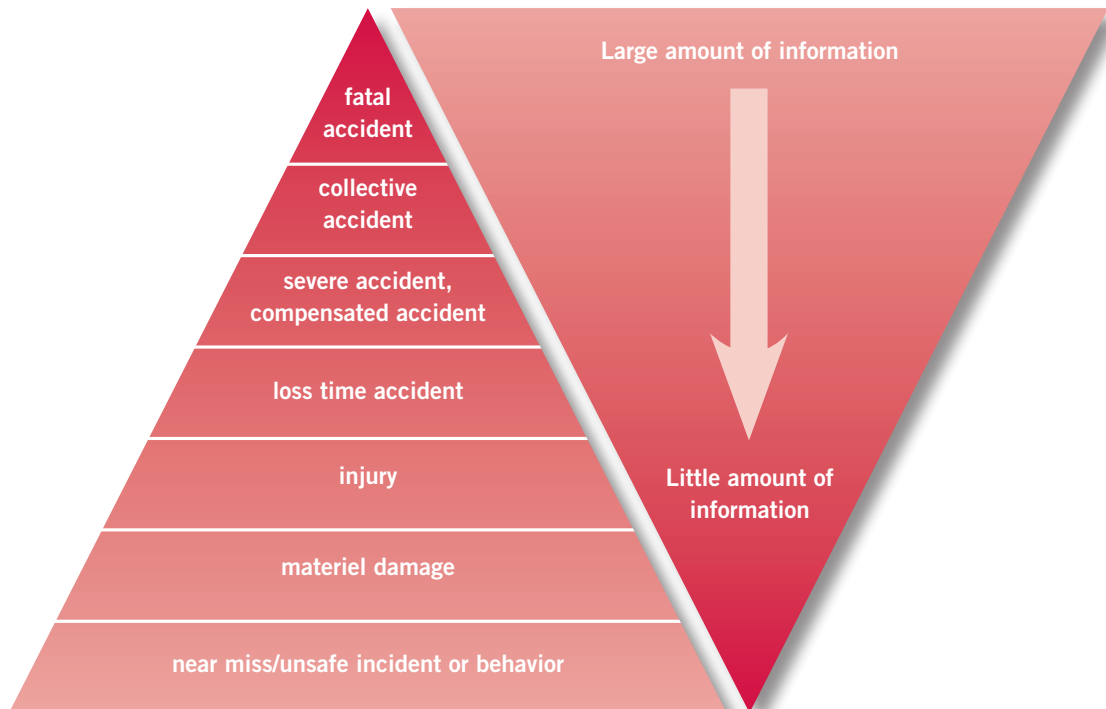


Figure 6.1 Gaps in insights into situations leading to accidents

How do we retrieve information from these important events? By creating a trusting, non-punitive environment to foster effective reporting of near misses, incidents and hazards. Unsafe behaviour that is expected to be reported but punished afterwards will lead to non-reporting.

7 Analysis of reported and collected data

Top tips

1. Data from occupational accidents and diseases forms the basis for preventive action at different levels: company level, industry level or national level
2. Additional industry data will increase the benefit
3. Real risk comparisons require a knowledge of frequency rates
4. Compare national frequency rates for different industrial trades
5. Compare national frequency rates for different sizes of companies
6. Compare national frequency rates over time periods
7. Compare national frequency rates for different groups of workers

The database of the reporting system offers universal use for different stakeholders in the field of safety and health at the workplace and in the field of rehabilitation and compensation. The different options for using this database should be considered during the design process. The data should be prepared and published in such a way that the results can be used by different stakeholders.

First of all, the database is a foundation for targeted prevention measures. A national annual report on occupational accidents and diseases is one important outcome. In combination with other statistical data from the country's economy, frequency rates can be calculated and show the real picture of the situation regarding occupational risks in different sectors and trades. Based on the reported and coded data, analysis could be done to show the most efficient areas for preventive action.

National, regional or sectoral preventive strategies and actions can be derived from this data and political decisions can be made on the basis of real facts, thus leading to better acceptance. Furthermore the database creates the basis for prevention campaigns or company programmes.

The database provides information which can be used by the labour inspectorate to take targeted actions, e.g. risk dependent inspections. Social accident insurance can use the data for its own prevention activities and so do the employer's and workers' organizations.

The database is useful for epidemiological studies and for risk assessment, management and follow-up of their evolving trends over time. Another important use of the data is for rehabilitation and compensation purposes. The financial data on different cases provides a basis for planning the financing of medical and occupational rehabilitation and the contribution of enterprises for the financing of the insurance system is calculated according to their individual risk class and the cost of compensation.

7.1 Linkage with other labour statistic data

To compare and benchmark as well as to identify relative risks and to clarify the economic effects, different additional parameters are needed, many defined by the ILO's *Labour Statistics Recommendation, 1985 (No. 170)*, including:

- Number of enterprises;
- Number of employees at industry, sector and enterprise level;
- Number of hours worked;
- Costs of occupational accidents and diseases; and
- Time loss due to accidents.

By interpreting accident frequency rates and the number of diseases in relation to these factors, it becomes clear in which sectors the highest risks occur, thus requiring the highest amount of intervention. Measuring incident rates against active workforce and hours worked indicates relative risks and allows benchmarking.

7.2 Calculation of frequency rates

To gain information on risk factors in different trades, sectors, or groups of employees, one needs to know the relative risk. This is determined as:

$$\text{Relative frequency} = \text{Absolute value} / \text{Reference value}$$

with the absolute value being counted incidents (such as accidents), and the reference value the benchmark used (such as the total number of workers exposed to the same risk or a defined amount of work hours).

The resulting frequency rate expresses how many workers out of 1,000 experienced an accident, for example.

Accident occurrences are sometimes related to an index of 100,000 or 1 million hours worked. To account for the fact that the risk is equivalent to work time, meaning that a part-time employee is exposed to a risk in a time that is shorter than a full-time employee, a statistical figure called the full-time equivalent employee (FTE) is sometimes applied.

Commuting accidents are typically weighed against the number of employees, because the risk of a commuting risk is (almost) completely independent of the hours worked.

The incidence rate of occupational diseases can be compared to the number of working people in the same way as accidents, but long latency times between exposure and onset of the disease (as previously discussed) can dilute the outcome, calling for very careful interpretation. Another factor to be considered in this context is the legal framework defining the list of occupational diseases, which is typically dynamic; in some cases, peaks in statistics of occupational diseases can be found which do not mean that the disease occurred more often, but has been added to the list of recognized occupational diseases in that particular time period.

7.3 Analysis results and actions

The scope of analysis can be nationwide, regional, or restricted to a certain industrial trade – depending on the purpose of interpretation and the size of the examined group, which has to be large enough to deliver statistically relevant data.

Analysis is also an efficient tool for labour inspectors. By analyzing the occurrences in their individual districts, they can establish priorities and assign more time to companies or trades with higher accident rates or incidence rates of occupational diseases, thus requiring more attention and showing a higher preventive potential.

Benchmarking of different industrial trades will identify those with the highest risks (commonly seen high-risk sectors are construction, mining and fishing) and provide the basis for targeted prevention campaigns.

Also within companies, statistical data can show valuable potentials for prevention. Identifying plants or production lines and posts with higher incidence rates show the need for action, while plants with consistently lower than average rates can be used as models of good practice.

The options for combining different parameters are varied and can, among many other options, show whether small businesses, migrant workers, young workers or contract workers need more attention because of higher risks, identify equipment with high accident and/or severity rates (for example conveyor belts), or identify shift work or maintenance as areas for action when showing above average incident rates.

Providing data on production costs, average operating profit margins and, as called for by the ILO's *Labour Statistics Convention, 1985 (No. 160)*, average earnings are available, productivity conclusions and the loss of economic output can be derived – a valuable fact in raising awareness of the need for prevention with business owners and managers.

8 Use of reported and collected data

Top tips

1. National statistics and reports on safety and health at work should be published;
2. Reports can focus on different targets: industrial trades, enterprises or accident types;
3. Company or industrial trade ranking supports motivation for preventive action;
4. Occupational accident and disease analysis offers the basic knowledge for safety and health strategies, campaigns and national action plans;
5. Occupational accident and disease analysis should be used for targeted assignment of labour inspection personnel;
6. Results from occupational accident and disease analysis influence the dialogue with machine manufacturers, new legislation and scientific research activities;
7. Occupational accident and disease analysis is important in evaluating the effectiveness of prevention activities;
8. Occupational accident and disease analysis influences rehabilitation, compensation and financing strategies.

There are many more utility aspects resulting from a complete and reliable reporting system and analysis of the recorded information. Analysis of the statistics is not simply a matter of counting the number of accidents over the time period.

The range of possible benefits can be divided into direct benefits, by using the occupational accident and diseases data, and indirect, extensive benefits, if the data is combined with other economic or financial industrial data obtained from other statistical systems. Examples are provided in the following sections.

8.1 Publication of occupational accidents and diseases reports and statistics

National reports and statistics

Every country should publish at least annually, national reports on the status of safety and health at work and statistics on occupational accidents and diseases. Apart from individual or personnel data, which have to be treated confidentially, the aggregated data from the national report should be accessible to everyone, especially stakeholders with a special interest in occupational accidents and diseases such as accident insurance, compensation funds, industrial associations, trade unions and labour inspectors.

The data should be published in a comprehensive and consistent way in order to deliver benchmarks for the different industrial trades and sectors, and should enable changes over the

years to be identified. Publishing national results is an effective tool in gaining public attention for safety and health at work.

Employers may be interested in these discussions if the publication is combined with financial data, e.g. about the loss of gross national product (GNP), the total costs of rehabilitation and compensation or the total number of work days lost due to accidents and diseases. The aim must be to convince them that investment in prevention is not a cost but a sensible investment for the future.

Of course not only is the absolute number of occupational accidents and diseases of interest but the frequency rates as well. Only by introducing frequency rates will a logical assessment of the data be useful. The closer the national definitions and frequency rates adopted are to internationally used agreed ones, the easier it will be to draw conclusions from international benchmarking.

Example: German national report on safety and health at work (SUGA)

The German Federal Institute for Occupational Safety and Health (BAuA), as a governmental research institution, publishes annual reports on behalf of the Federal Ministry of Labour and Social Affairs containing data on accidents at work, occupational diseases, pensions, lost work time and working conditions, as well as comprehensive data on numbers and distribution of the working population.

The extensive German national report is available to download at www.baua.de/suga (German only); it is also available in an accessible version for disabled users.

Annex 3.2 shows an example of key figures for occupational safety and health as part of the German national report on safety and health at work. This sample page lists the categories:

- reportable accidents at work
- reportable commuting accidents
- accumulated reportable accidents at work and commuting accidents.

Each of these categories is broken down by industry, farming, and public services and listed for a three year period (in this example, 2007–2009).

Example: Annual trade report for the raw material industry and construction materials producers

As the statutory accident insurance for the raw material industry and producers of construction materials in Germany, the Steinbruchs-Berufsgenossenschaft (StBG) publishes an annual report introducing new developments in prevention and giving insight into statistics on occupational accidents and diseases.

Annex 3.3 shows an example of key figures for occupational safety and health as part of this trade report on safety and health at work. The sample pages first give an overview of the number of insured companies, insured workers, and work hours. For each category of insurance

case – accident at work, commuting accident, and occupational disease – values are given for total accident figures, new pensions, and fatalities. These are compared over time, both as figures and as graphs, short and long term. Frequency rates are shown in relation to full-time employees and worked hours for comparison; in addition, different industrial trades covered by this insurer (such as cement, concrete, crude oil and natural gas, etc.) are benchmarked and compared to the overall average accident rate per 1,000 full-time employees.

Annex 3.4 shows another output of accident statistics as used in this report in the form of an accident description and conclusions for prevention to be applied by operators. Because accident analysis of this sector showed that the recycling of construction material causes more accidents than average and falls are a frequent cause of accidents, an example is discussed including advice on how to prevent accidents like the one demonstrated.

Example: National report from Japan

The Japan Industrial Safety and Health Association (JISHA) publishes an annual report. Alongside information on JISHA's strategy and programmes, the report shows figures for the long-term development in fatalities, injuries leading to an absence of four or more days, and serious industrial accidents, defined as accidents resulting in three or more deaths and/or injuries at a time.

Annex 3.5 shows an example page from JISHA's annual report, introducing statistics on fatal accidents and accidents leading to an absence of four days or more from work.

Industrial and enterprise level analysis

The available information can of course be used at the enterprise level as well. Firstly it is the job of the enterprise itself to carry out a regular company-specific analysis of occupational accidents and diseases due to incidents occurring in the company. Every responsible employer or manager will be interested in seeing this data, to see the potential for internal improvements and to compare the results with those for the whole industrial trade.

Example: Company level analysis

As the statutory accident insurance for the raw material industry and the construction materials producers in Germany, StBG used a database that individually analyzed many different aspects of each particular business. One is the accident frequency rate per 1,000 full-time employees weighed against the trade (in this example ready-mix concrete) and the whole raw material industry and construction materials producers over a ten-year time span.

Annex 3.6 shows an example of benchmarking an individual company against the whole trade and the industry as a whole. The unit is accidents at work per 1,000 full-time employees; the comparison spans a ten-year time frame.

Some accident insurance organizations offer their insured member companies specific occupational accident and disease analysis within their service category. This enables enterprises to compare their own occupational safety and health performance to the industrial trade figures and to identify their potential for improvement.

Example: Public access to safety record of individual company

The US Mine Safety and Health Administration publishes data on injuries (fatal and non-fatal), hours worked, production totals, citations, orders, and safeguards on individual US mines via the internet. Anyone can research a specific operator's safety record, number of inspection results and even exposure levels to silica dust. The retrieval system is located at www.msha.gov/drs/ASP/BasicMineInfostatecounty.asp

Annex 3.7 shows an overview of a specific mine's parameters as available online.

Company ranking

If all member companies agree, it is common for employer organizations to publish rankings of the safety and health performance of their members. This allows every company to compare its own position with its competitors. Sometimes this will be done anonymously, with every company having its own identification number so that it can only identify its own position.

Example: Trade-wide ranking

PMBG, German statutory accident insurance for the paper industry, published an annual benchmark of all companies employing more than 60 full-time workers, taking into consideration the work time lost due to accidents. This benchmark enabled each individual company to match its own safety record against the standard for the relevant industry.

Annex 3.8 shows a comparison of lost work hours due to accidents per 1,000 work hours, divided into the groups:

- A** – more than 600 full-time employees
- B** – 401 to 600 full-time employees
- C** – 301 to 400 full-time employees
- D** – 201 to 300 full-time employees
- E** – 101 to 200 full-time employees
- F** – 60 to 100 full-time employees

Each company is viewed according to the last year (in this case 2008), and a four-year average 2004–2007. Each company is also benchmarked against the average of its group (A–F), and the industry as a whole.

Example: Fact sheets for Australian industrial sectors

Safe Work Australia, as an Australian Government statutory agency with primary responsibility to improve work safety and health and workers' compensation, publishes, among many other reports on facts and figures on occupational safety and health, fact sheets on individual industrial sectors such as mining or construction. Each two-page fact sheet covers serious claims and fatalities, weighing the results against the number of employees and local regions. The sheets also give insight into the most common causes of fatalities such as vehicle incidents or being hit by falling or moving objects.

Annex 3.9 shows a fact sheet on the Australian manufacturing industry published by Safe Work Australia.

8.2 Continuous improvement through the 'from reporting to prevention cycle'

Collection of good-quality data is a prerequisite for stakeholders to understand the importance of safety and health at work and of the benefits of investing in targeted prevention. The social and economic impact of occupational accidents and diseases on the national economy, on product and service quality and on the competitiveness of enterprises and the national economy is becoming more of a focus for stakeholders worldwide.

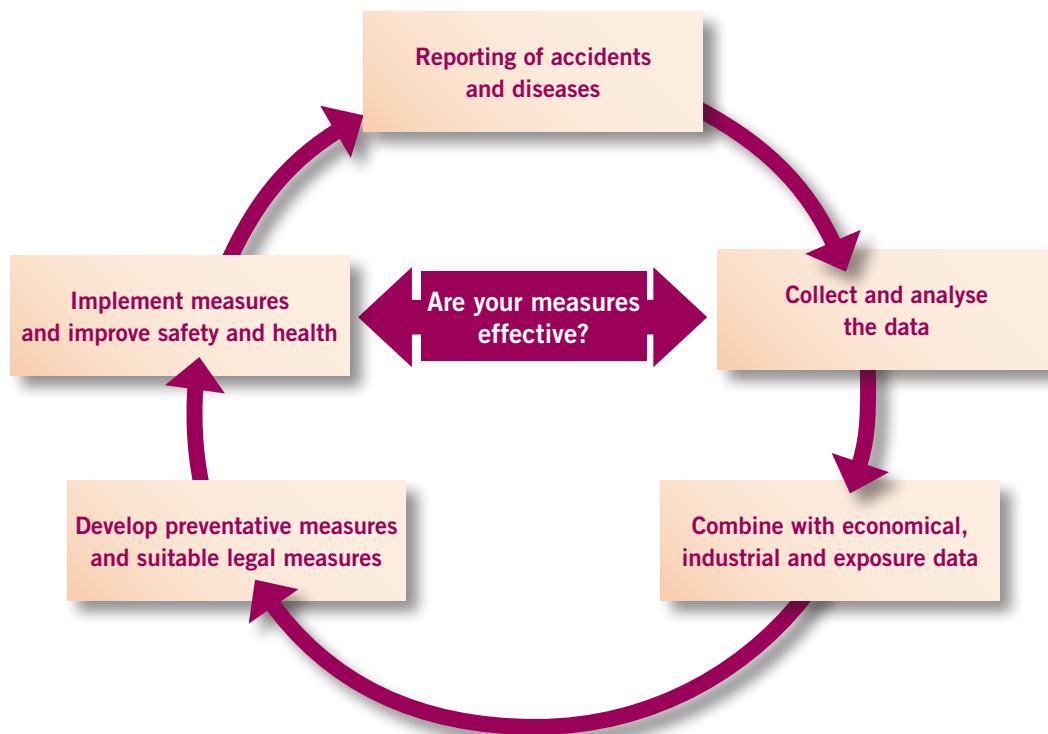


Figure 8.1 The 'from reporting to prevention cycle'.

The ‘from reporting to prevention cycle’ in the Figure 8.1 shows how reporting, data collection and analysis should be linked to measures at the workplace to improve safety and health. Reliable data allows the right measures to be taken and checking to see whether the measures are effective and really do help improve safety and health in the workplace. If the results are not good enough, the measures taken have to be corrected.

Without reliable data it is impossible to set the right targets and identify the areas where investments in prevention activities are needed in order to reduce accidents and diseases by improving working conditions, which in turn will contribute to the productivity and economic growth of the enterprises concerned. Without reliable data it is impossible to develop and support measures to change unsafe behaviour resulting from customary or social cultures that have an influence on safety and health at work. Without reliable data, societies will fail to recognize the importance of work safety compared to other important areas such as protecting the environment.

The biggest problem for all systems, and especially for systems in emerging economies or developing countries, is the coverage, reliability and quality of reporting by employers and companies. The statutory obligation to report occupational accidents and diseases alone will not lead to sufficient reporting rates if there is not a self-motivating element, encouraging employers and companies to report all accidents and diseases at work. The potential risk of becoming liable to prosecution could deter those responsible from strict reporting, if there is no general awareness that reporting is an essential part of collecting knowledge for targeted prevention strategies that would be beneficial for prevention of the recurrence of similar cases and for productivity and economic growth, and that non-reporting will incur a penalty if detected by other elements of the system.

Another consequence is that the quality of the worldwide, regional, sectoral or even national available data is poor. Therefore estimation approaches have to be used.

Even in countries with highly developed labour inspection systems, reporting rates are only 75 to 80 per cent. A separate reliable system of social security and occupational accident and disease insurance is critical to the comprehensive reporting of occupational accidents and diseases.

8.2.1 Prevention strategies at the national, regional, industrial and enterprise level

According to the ILO’s *Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187)*, every country shall:

- promote a safe and healthy working environment by formulating a national policy;
- establish, maintain, progressively develop and periodically review, a national system for occupational safety and health, in consultation with the most representative organizations of employers and workers; and
- formulate, implement, monitor, evaluate and periodically review a national programme on occupational safety and health in consultation with the most representative organizations of employers and workers.

In order to formulate a national policy and to develop the aims and the areas of action of a national programme, reliable data on the type, causes, severity, order of precedence and frequency rate of occupational accidents and diseases are indispensable. These can only be obtained from a national system for data collection and analysis.

The database plays a fundamental role not only for national strategies, but also for regional, sectoral, industrial trade or even enterprise-specific strategies.

8.2.2 Targeted prevention activities

The data from thorough reporting and data collection provide the basis of evidence for decisions on all kinds of preventive action in order to improve safety and health at work. These actions include awareness and safety campaigns, industrial and sectoral strategies and campaigns, dialogue with manufacturers, scientific research to identify risks and find new risks, establishing and updating legislation and standards, evaluation of prevention initiatives, rehabilitation strategies, and financing and compensation strategies.

8.2.3 Targeted labour inspections

The data from thorough reporting and data collection provide basic information for setting the required priorities for labour inspection services and helping to allocate the resources they have available. By using the data, inspection frequency rates can be defined and the resulting personnel resources calculated. The data can be used for deciding the required manpower by the government. Based on the evidence collected, available resources for advising and inspecting can be effectively used for the enterprises which are most in need and high-risk sectors and even for individual labour inspectors to plan their work, according to demand.

Data from the national database provide information on high-risk machines or plants and machine safety deficits. This should be used for a constructive dialogue with designers, manufacturers, importers or suppliers of machinery and equipment. As a result, the safety deficits with machines can be eliminated and the knowledge and understanding of machine designers will increase. At the end of the chain of discussion it is even possible that the machine will be audited and certified by an independent machine testing institution.

8.2.4 Research, compensation and other uses

Data from the national database provide information for scientific research to help answer workplace safety and health questions like risks from chemical agents, risks resulting from shift work, risks resulting from dust and silica exposure, risks and the main causes of accidents from different types of machinery, times when accidents on the way to work or back home are prone to happen, the ages at which workers are more likely to experience accidents or the means of transportation that have more accidents.

Furthermore data is important in quickly identifying new or emerging risks in the workplace, so that prevention strategies can be developed as early as possible.

The data from thorough reporting and data collection provide basic knowledge for the design or revision of labour laws, technical guidelines and safety standards. The data help to provide an evidence foundation for establishing new or updated legislation, technical rules or standards.

Last but not least, data from the national database are required to evaluate the effectiveness of all prevention strategies, initiatives and activities.

Data from the national database is not only necessary for setting up, steering and controlling prevention strategies, they are also helpful for rehabilitation strategies. Important information

includes knowledge about the number, types and local distribution of injuries and diseases requiring special treatment, such as specialized departments for treatment of burn victims.

Some countries use a network of specialized clinics for the treatment of occupational diseases and injuries. Data from the national database will be used to plan the required number of treatment places and their regional position. The data can also help in developing specialized treatment procedures for different kinds of injuries and different occupational diseases. A measure like this is highly recommended because every investment in medical and social rehabilitation is a better social solution and is more cost effective than paying lifelong pensions.

There is another aspect regarding the use of data from thorough reporting, data collection and analysis: the data is very important for compensation strategies and financing of the whole system.

First of all the database provides information for the government to calculate the effect of changes in regulations for compensation. For example a necessary increase in the percentage of pension payments can be calculated in advance.

The database can also be used to distribute the costs of occupational accidents and occupational diseases as fairly as possible according to the 'perpetrator pays' principle. Statutory accident insurance uses the data to create and update risk classes for the industry in order to calculate the contribution from different trades as fairly as possible. Furthermore many systems use the database to run their so-called bonus-malus system in order to motivate enterprises to invest in better prevention.

9 Extension of the coverage of the reporting system

As listed in Chapter 8 there are multiple uses of a reliable national system of reporting, data collection and analysis. But of course some special considerations have to be included during the design process.

9.1 Small and micro enterprises, self-employed, contracted and migrant workers, and workers in informal sectors

The smaller the enterprise the more difficult it is to include in the system. Statistical data from countries with long experience in national accident statistics show that the smaller the enterprise, the higher the risk of workers suffering an occupational accident or disease. The problem is not only the higher frequency rates, but also the total number of accidents and diseases. This is because the total number of small and micro enterprises exceeds the number of medium and large enterprises dramatically. In Germany for example, of 3.2 million enterprises, more than 2.8 million are in the group of less than ten employees; their risk of an accident at work and compensated accident is about 30 per cent higher, and the risk of a fatal accident is almost 2.5 times higher than the average for all companies.

In general, therefore, all enterprises, irrespective of their size, should be included in the system. If this group is excluded, it is impossible to get a true picture of the conditions of safety and health at the workplace because the most risky businesses are excluded. This creates not only a weakness in the statistical data, it also creates a poor approach to prevention, given this group needs external support in the field of prevention, not having the internal structures of safety and health experts as larger enterprises do.

The question to be answered is how to start communication and dialogue with this group of companies. It is important to have an administrative connection to the small and micro enterprises, which means they should have a duty to register on a national enterprise database. In many countries this registration is used for multiple purposes, e.g. as important information for the tax authorities, for social insurance or for labour inspection.

If employees or even employers from small and micro enterprises are included in the benefits from accident insurance such as cost coverage for medical treatment after accidents or pension payments, there is a self-motivating element encouraging employers to report.

Including self-employed persons (e.g. freelancers) is more difficult. In principle there are only two ways to solve the problem, if the national reporting strategy intends to include accidents involving self-employed persons in the national database.

It may be possible to motivate this group to report their occupational accidents voluntarily. But why should they do this, if they don't see any personal benefit?

It is therefore recommended to include the self-employed in the statutory accident insurance by law. This ensures their accident reports will be included because they are expecting their benefits from the rehabilitation and compensation cost coverage of the insurance body.

It seems that modern economies need these flexible types of employment because of global competition. Of course it is necessary to mention that a clear legal framework is required in order to avoid misuse. Under these positive circumstances the inclusion of contract work and work organized by temporary work agencies in the reporting system is not a problem for workers with a clear connection to their employer, who is responsible for reporting.

A more serious problem is including these workers in the prevention activities of the contracting enterprise and in the prevention services.

There is a serious problem with including illegal migrant workers and informal sector workers in the reporting system. If these workers are carrying out illegal work it is a criminal act and there is no mechanism and no advantage for the employer or the client to report – in fact there is an advantage in not reporting because of the legal consequences.

Therefore the strategy should aim to prevent illegal work and the shadow economy. Sometimes accidental knowledge of serious accidents involving illegal workers helps to combat illegal work. All countries have a duty to develop national strategies to combat illegal work and the shadow economy by strict legal regulations and regular inspections and to transfer illegal to legal migrant work.

Today we have a global labour market that includes migrant work from low income countries to higher income countries. The total global migrants are estimated to be 214 million – about 3.1 per cent of the world's population, more than double the number 25 years ago and that this will increase to 4.5 per cent by 2050. This means we are facing an increasing problem. There are countries where 50 per cent of the workforce is working outside the country. But it is not just a question of state-to-state migrant workers, in some large countries there is also the problem of migrant work inside the country.

The solution is to legalize migrant work and include migrant workers in all legal obligations as normal workers. Following this approach, it is recommended that every country should install an institutional body (state migration service) dealing with the problem of migrant work. Migrant workers must be included in social security systems. If they contribute to the economic growth of a country by their work, they have the right to benefit from the social system as well. Migrant workers should be listed in an electronic database and should have to register when they enter the country.

If migrant workers are working legally, it will be possible to include them in the reporting system as well. Again, the responsible employer should have a duty to report any accidents involving migrant workers in the same way as he is obliged to do for resident workers. Their accidents have to be counted in the database of the country where they work, because this describes the situation of workplace safety in that country and not in their native country.

As far as migrant workers in China are concerned, for example, there are new initiatives to include them in the social security coverage. Within projects for fair trade of natural stone from China for example, the label editor requires work contracts and social security coverage even for the migrant workers. If employers agree to that, they will also agree to report accidents.

9.2 Arrangements for reporting

Sometimes it is unclear who has the duty to report, especially when several employers cooperate in complex projects. Construction work is always a complex matter because it requires the cooperation of many enterprises and their employers in complicated organizational structures (client, main contractor, subcontractors) and a scenario that changes from day to day.

However, the duty to report should not be the most serious problem if the national legislation stipulates that every worker is working for and paid by only one employer for a certain job; this employer will be the responsible one. A problem in complex working scenarios is how to organize the transfer of knowledge about the accident from the person in charge of reporting to the person in charge of prevention. This can be solved by regulating which parties receive a copy of the accident report.

If the reports have to be sent to the statutory accident insurance and the data collection and analysis is done there, the benefits are obvious. But there are also risks, as a result of the financial consequences for the employer. Typically the knowledge of accidents and their costs will be used indirectly to calculate the employer's contributions by determining different risk classes. If the number and the costs of accidents influence the overall contribution of the employer directly (which is a positive way of motivating the employer to invest in prevention), there might be a risk of accidents not being reported so as to reduce contributions. Therefore the reporting system should include control elements such as acquiring information by two methods of reporting, e.g. reports from the employer plus reports from a medical doctor.

Occupational diseases should be included in the database. Occupational accidents and diseases, perhaps including commuting accidents, show the real situation on the results of safety and health at work performance in a country.

But the reporting procedures may be slightly different. Many occupational diseases do not show their negative health effects immediately but only after years of exposure (latency period). Therefore regular medical health check-ups are required in order to detect occupational diseases as soon as possible. Some can occur even after exposure has ended, because of the characteristics of the disease.

Another decisive factor has to be considered: the occupational disease may result from different employer–employee relationships. All this makes it difficult to determine which enterprise is responsible for the evolution of the disease and should have the duty to report.

Therefore some countries have the following convention: the occupational disease will be reported to the compensation body first by the medical doctor, who has made the diagnosis and who has a suspicion that an illness may be caused by work. Thereafter the compensation body will investigate all employers during the work history of the worker and contact them. The actual employer is asked to report even if he is not responsible for exposure. When entering the case into the database, care must be taken to ensure that the case is classified according to the last exposure, in order to avoid deriving wrong results.

Sometimes there is a discussion about whether an accident or an illness is work-related or not, which means the case could be a public health case. This happens increasingly if the benefits for workplace-related cases are wider than in case of regular medical treatments such as those covered by health care. Clear legal definitions help to reduce these controversies.

Within the national discussion concerning the responsibility for reporting, data collection and evaluation, the question may arise as to what are the advantages or disadvantages of private versus statutory accident insurance. In most of the known systems which include private accident insurance, the prevention component is missing. This should be regarded as a major deficit, because the 'from reporting to prevention cycle' is inactive. Inputs towards better prevention cannot be made by the system. Furthermore the motivation to use all the collected information for activities in the reduction of occupational accident costs is higher in a statutory system than in a private one.

9.3 Protection of privacy

For all data collection processes, and that includes the collection of data from occupational accidents and diseases, data protection issues are becoming more and more important. When personal data is collected, care should be taken to protect the privacy of the workers concerned. It is recommended to consult the national data protection body.

Appendix



Appendix I: Useful ILO references

- Employment Injury Benefits, 1964 (No. 121), and its accompanying Recommendation (No. 121)
- Occupational Safety and Health Convention, 1981 (No. 155), and its accompanying Recommendation (No. 164)
- Protocol of 2002 to the Occupational Safety and Health Convention, 1981 (No. 155)
- Labour Statistics Convention, 1985 (No. 160), and its accompanying Recommendation (No. 170)
- Occupational Health Services Convention, 1985 (No. 161), and its accompanying Recommendation (No. 171)
- List of Occupational Diseases Recommendation, 2002 (No. 194)
- Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187), and its accompanying Recommendation (No. 197)
- Recording and notification of occupational accidents and diseases
An ILO code of practice, 1996
- International Labour Organization
Report of the 18th International Conference of Labour Statisticians, Geneva,
24 November – 5 December 2008, ICLS/18/2008/IV/FINAL
- International Labour Organization
Report III: Statistics of occupational injuries
Sixteenth International Conference of Labour Statisticians, Geneva,
6–15 October 1998, ICLS/16/1998/III

Appendix II:
Useful documents and forms



Annex 2.1

Example of instructions amended to accident report form as included in the report form used in Germany


I. General comments	
Who is responsible for filling out the accident report?	The company or its authorised party is responsible to making the report. Authorised parties are individuals who have been explicitly commissioned by the company to make the report.
When does an accident report have to be submitted?	A report must be submitted if an accident at the workplace or on the way to/from work has resulted in an incapacity to work for more than 3 calendar days , or has resulted in the death of an insured.
How many copies of the accident report must be submitted? Where is it sent?	The accident report must be sent to the responsible insurer. Where the company is subject to general occupational safety supervisory authority (for agricultural operations with employees), one copy must be sent to the regional authority which is responsible for occupational safety (e.g. commercial supervisory agency, federal agency for occupational safety. Where the company is subject to mining supervisory authorities, one copy is sent to the responsible lower mining authority. One copy stays with the company for documentation purposes, and one copy is submitted to the workers' council (if applicable).
Who must be informed of the accident report?	Insured parties for whom a report is submitted must be advised of their right to demand a copy of the report. The company or its authorised party must inform the specialist for occupational safety and company physician of the accident report.
How is the accident report submitted?	Besides sending the report by mail, it is also possible to submit the report through electronic means, as long as the recipient offers this service e.g. on his homepage.
What is the time period for submitting an accident report?	The company or authorised party must submit the accident report within 3 days of obtaining knowledge of the accident.
What needs to be observed in the case of serious accidents, mass accidents or deaths?	Fatal accidents, mass accidents and accidents with serious health injuries must be immediately reported to the responsible insurer; for companies which are subject to a general occupational safety supervisory authority or the mining supervisory authority, such incidents must also be reported to the regional authority or lower mining authority responsible for occupational safety (telephone, fax, e-mail).
II. Explanations regarding the questions in the accident report	
2.	Please enter company number (member number) at the accident insurer (e.g. included in premium notice or notice regarding responsibilities).
9.	An employee of a temporary work or staffing agency who works at the company is considered temporary staff (a temporary worker contract is in place).
13.	In the case of statutory health insurance with a claim to sick benefits, name, post code and place of the insurer is sufficient; in other cases please also indicate the type of insurance (e.g. private insurance, pensioner health insurance, family insurance, voluntary insurance at statutory health insurance).
17.	A description of the accident should contain detailed information regarding the accident and immediate circumstances (where, how, why, under what circumstances, information on involved equipment or machinery). In particular, the accident description should address the following: information on the location at which the accident occurred (e.g. office, locksmithery, sales area for men's clothing, work yard, greenhouse, barn). indicate activity carried out by the injured. e.g. ... served a customer, ... was carrying documents to master craftsman's office, ... was removing a bolt, ... was unloading a delivery truck, ...was repairing a machine (type, manufacturer, model, year). indicate circumstances which characterised the progression of the accident (circumstances which caused the accident, which work tools were used or on which machinery and equipment the work was carried out). e.g. ... leaned too far to the side so that ladder slipped and he fell 3 metres to the ground, ... tilted the wood and was caught by circular law (manufacturer, model, year), ... slipped due to waste/dirt/grease/manure on the ground. Is it possible that work conditions such as heat, cold, noise, dust, radiation could have been related to the accident? Did it involve the handling of hazardous substances which may be related to the accident? The description of the accident may be continued on the back of this sheet or on an extra sheet.
18.	Examples: right underarm, left index finger, left foot and right side of the head
19.	Examples: bruising, broken bones, sprains, burns, lacerations, cuts
23.	Enter here e.g. sales clerk, bookkeeper, mason, electrician, nurse, farmer, gardener (do not use "worker", "employee" or "company owner").
25.	Examples: office, warehouse, locksmithery, laboratory, food department, factory yard, building yard

Source:

Deutsche Gesetzliche Unfallversicherung (DGUV), umbrella association of the accident insurance institutions for the industrial and public sectors, <http://www.dguv.de/content/index.jsp>
(Unofficial translation into English)

Annex 2.3 (1)

Example of accident report form as used in England



Health and Safety at Work etc Act 1974 ?
The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995

[Click here for report guidance](#)

Report of an injury or dangerous occurrence

Filling in this form
This form must be filled in by an employer or other responsible person.

Part A

About you

1 What is your full name?

2 What is your job title?

3 What is your telephone number?

About your organisation

4 What is the name of your organisation?

5 What is its address and postcode?

6 What type of work does the organisation do?

Part B

About the incident

1 On what date did the incident happen?

2 At what time did the incident happen?
(Please use the 24-hour clock eg 0600)

3 Did the incident happen at the above address?
Yes Go to question 4
No Where did the incident happen?
 elsewhere in your organisation – give the name, address and postcode
 at someone else's premises – give the name, address and postcode
 in a public place – give details of where it happened

If you do not know the postcode, what is the name of the local authority?

4 In which department, or where on the premises, did the incident happen?

F2508 (05.00)

Part C

About the injured person
If you are reporting a dangerous occurrence, go to Part F. If more than one person was injured in the same incident, please attach the details asked for in Part C and Part D for each injured person.

1 What is their full name?

2 What is their home address and postcode?

3 What is their home phone number?

4 How old are they?

5 Are they
 male?
 female?

6 What is their job title?

7 Was the injured person (tick only one box)
 one of your employees?
 on a training scheme? Give details:

 on work experience?
 employed by someone else? Give details of the employer:

 self-employed and at work?
 a member of the public?

Part D

About the injury

1 What was the injury? (eg fracture, laceration)

2 What part of the body was injured?

[Next Page](#)

Source:

Health & Safety Executive, <https://extranet.hse.gov.uk/lfsrver/external/F2508IE>

Annex 2.3 (cont.) (2)

3 Was the injury (tick the one box that applies)

a fatality?

a major injury or condition? (see accompanying notes)

an injury to an employee or self-employed person which prevented them doing their normal work for more than 3 days?

an injury to a member of the public which meant they had to be taken from the scene of the accident to a hospital for treatment?

4 Did the injured person (tick all the boxes that apply)

become unconscious?

need resuscitation?

remain in hospital for more than 24 hours?

none of the above.

Part E

About the kind of accident

Please tick the one box that best describes what happened, then go to Part G.

Contact with moving machinery or material being machined

Hit by a moving, flying or falling object

Hit by a moving vehicle

Hit something fixed or stationary

Injured while handling, lifting or carrying

Slipped, tripped or fell on the same level

Fell from a height

How high was the fall?

metres

Trapped by something collapsing

Drowned or asphyxiated

Exposed to, or in contact with, a harmful substance

Exposed to fire

Exposed to an explosion

Contact with electricity or an electrical discharge

Injured by an animal

Physically assaulted by a person

Another kind of accident (describe it in Part G)

Part F

Dangerous occurrences

Enter the number of the dangerous occurrence you are reporting. (The numbers are given in the Regulations and in the notes which accompany this form)

For official use

Client number Location number Event number

INV REP Y N

Part G

Describing what happened

Give as much detail as you can. For instance

- the name of any substance involved
- the name and type of any machine involved
- the events that led to the incident
- the part played by any people.

If it was a personal injury, give details of what the person was doing. Describe any action that has since been taken to prevent a similar incident. Use a separate piece of paper if you need to.

Part H

Your signature

Signature

Date

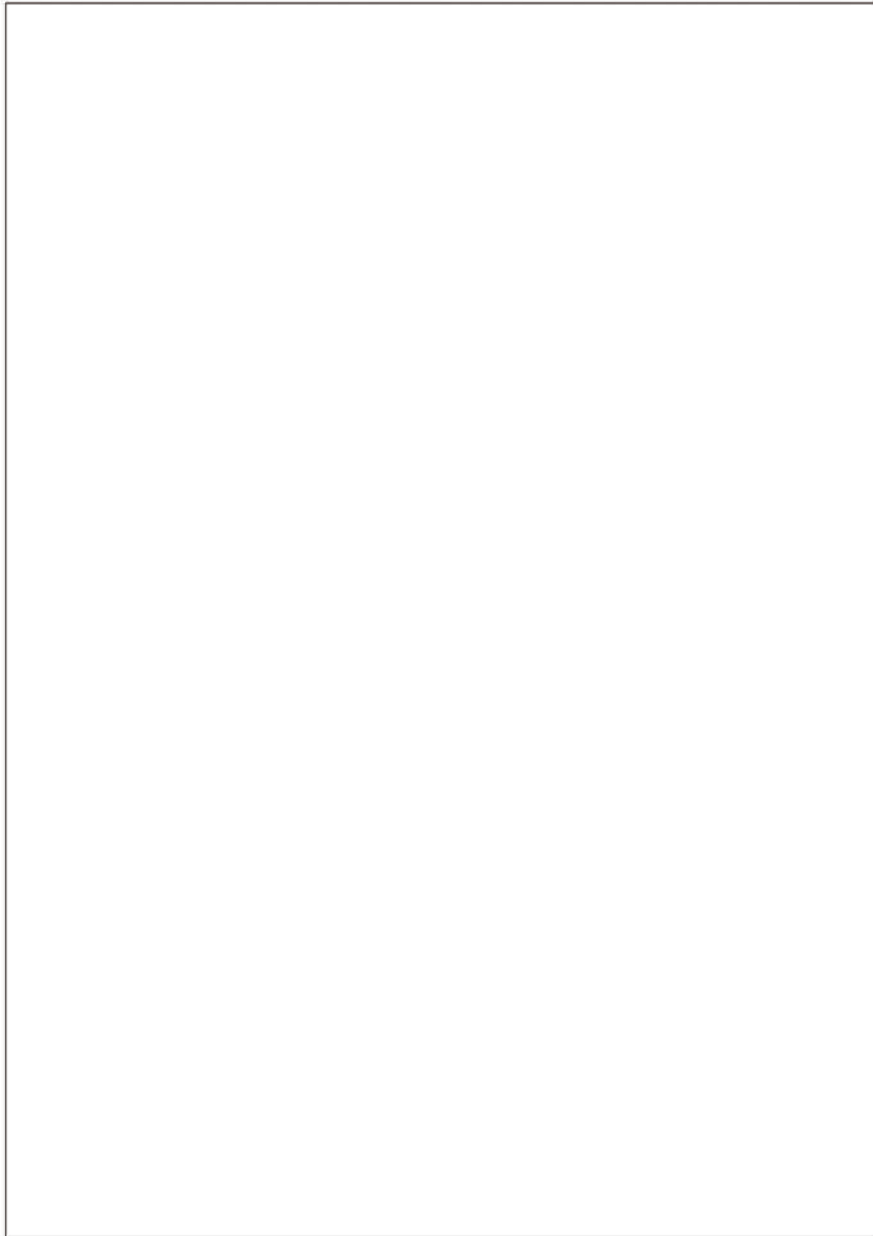
If returning by post/fax, please ensure this form is signed, alternatively, if returning by E-Mail, please type your name in the signature box

Where to send the form
 Incident Contact Centre, Caerphilly Business Centre,
 Caerphilly Business Park, Caerphilly, CF83 3GG.
 or email to riddor@connaught.plc.uk or fax to 0845 300 99 24

Continue

Annex 2.3 (cont.) (3)

Please continue on this page if necessary.



Annex 2.4 (1)

Example of an instant brief report on serious accidents as used in Germany (aggregates industry)

Instant report on severe accidents

1. Accident / event categorized as:

- A: Accident with fatal injuries
 B: Accident with severe injuries
 C: Accident with several affected workers (mass accident)
 D: Evaluation promises significant gain of knowledge for prevention
 E: Incident with expected interest of the public

2. Accident investigation:

immediately on:	by:
with next periodic visit:	<input type="checkbox"/> responsible labor inspector

3. Pass information on to:

In cases according to 1.:	A	B	C	D	E	Date:	Memo:
Manager prevention:	X	X	X	X	X		
Other prevention units:	X	X	X		X		
Regional administration:	X	X	X				
Public relations unit:					X		

4. Additional information:

5. Submitted by:

Name: _____ Date / signature: _____

6. to be requested with the person calling in:

Company:

Company name:		Location:	
Company ID:			

Caller:

Name:		Time:	
Date:		eMail:	
Phone:			

Source:

BG RCI, Berufsgenossenschaft Rohstoffe und chemische Industrie, German Social Accident Insurance Institution
for the raw materials and chemical industry.
(Unofficial translation into English)

Annex 2.4 (cont.) (2)**Injured Person:**

Date of accident:		Time of accident:	
Name:			
Age:			
Marital status:		Hospital:	
number of children:		Physician:	

More injured persons? -> please fill out additional tables!

On the accident: (keywords sufficient)

Course of accident:	
Accident cause:	
Accident consequence(s):	
Already taken preventative measures.:	

Have other institutions been contacted?

	Date:	by company:	by others:
Mining authority:		<input type="checkbox"/>	
Police:		<input type="checkbox"/>	
Other:		<input type="checkbox"/>	

Annex 2.5 (cont.) (2)**Accident ID :****Name of injured person:** _____

Accident date and time , : h

Address of injured person

Birth date

Nationality

Marital status

On the company

Type of business :

Number of employees :

On the injured person

Sex :

Occupation :

Injured body parts :

Type of accident :

Fatal accident? : yes**Accident description according to company report:**

Coding:

Annex 2.5 (cont.) (3)**Accident ID :****Name of injured person:****Information on the investigation procedure**

The following advice helps to cover all relevant aspects of the investigation.

1. Description on the accident scene, company are, organizational unit (please also take into consideration aspects such as construction sites or solitary work without supervision)
2. **On the injured person**
 - in what organizational unit does the injured person typically work?
 - level of education
 - position within the company
 - In this job since when?
 - Contracted work
3. **Job assignment of injured person at the time of the accident**
 - Has the task leading to the accident been due to a specific assignment??
 - Has suitable personnel been chosen?
 - Have safety briefings been conducted?
 - Has the task leading to the accident been a regular part of the job?
 - Data on the risk assessment
 - With construction or tear down work: specific instructions
4. **Areas of responsibility:** supervisor, responsible person, coordinator (name persons, especially with construction work):
 - Position and responsibilities within company
 - with construction work: fore worker, supervisor, coordinator
 - Where has the supervisor been during the accident?
5. **Course of accident** (description without own assessment):
 - Work environment
 - Relevant objects, machines, substances
 - list data on supplier, type, year of all work tools (equipment, machines, tools, substances), conformity declarations
 - Has the equipment been manufactured in-company, or significantly modified?
 - In use since when?
 - Safeguards available, modified or removed (by supplier or operator)?
 - Task of injured person and other involved persons, such as on construction sites, with vehicles, mobile cranes, ...
 - Duration of work time before accident, breaks?
 - Has Personal Protective Equipment been used?
 - Operational status before the accident: Normal work / inspection / maintenance / repair / ...
 - Technical drafts, photos, other important documents
 - while loading and unloading of vehicles:
 - has another vehicle been involved?
 - license and owner

Annex 2.5 (cont.) (4)

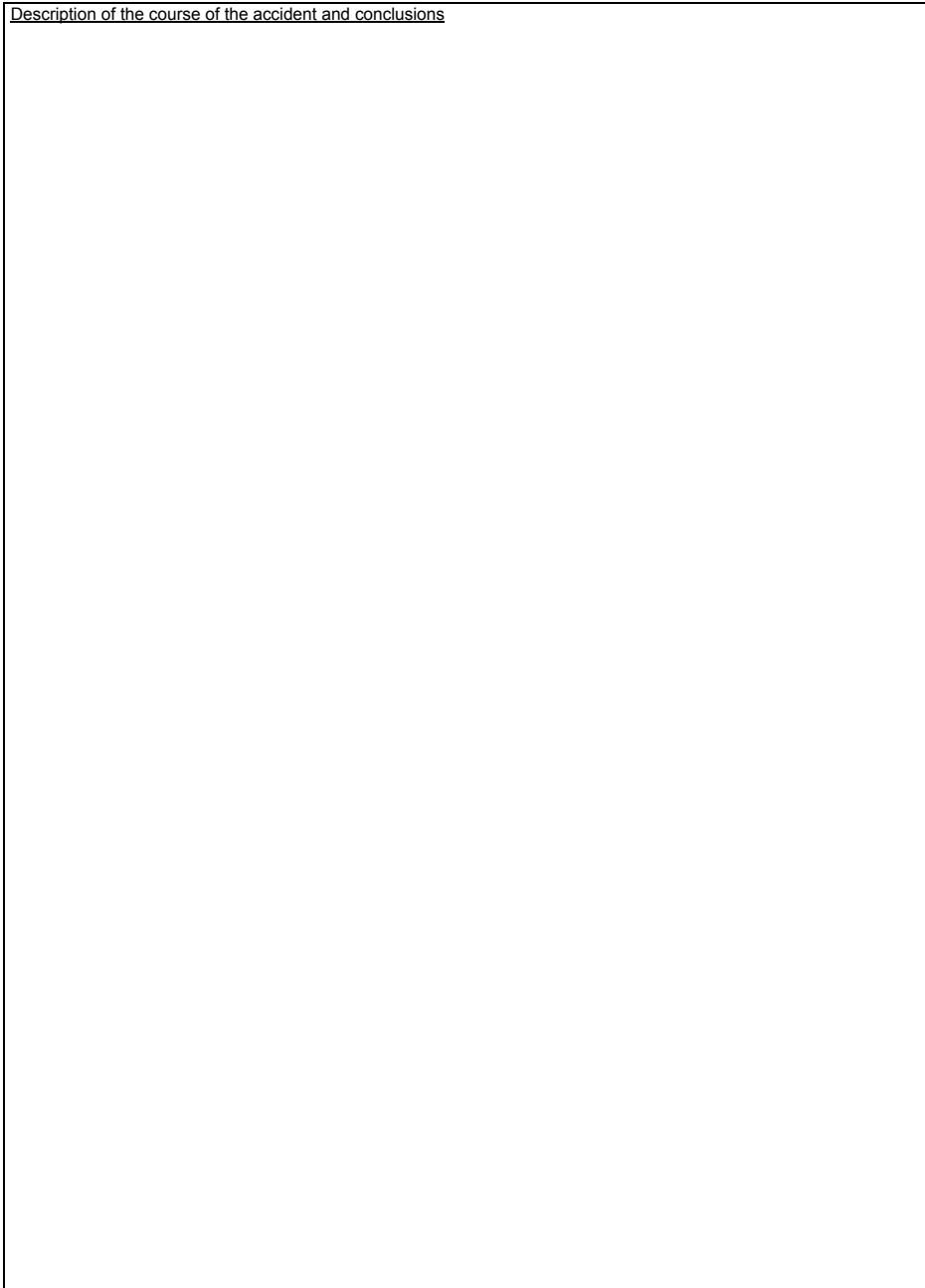
Accident ID :
Name of injured person: _____

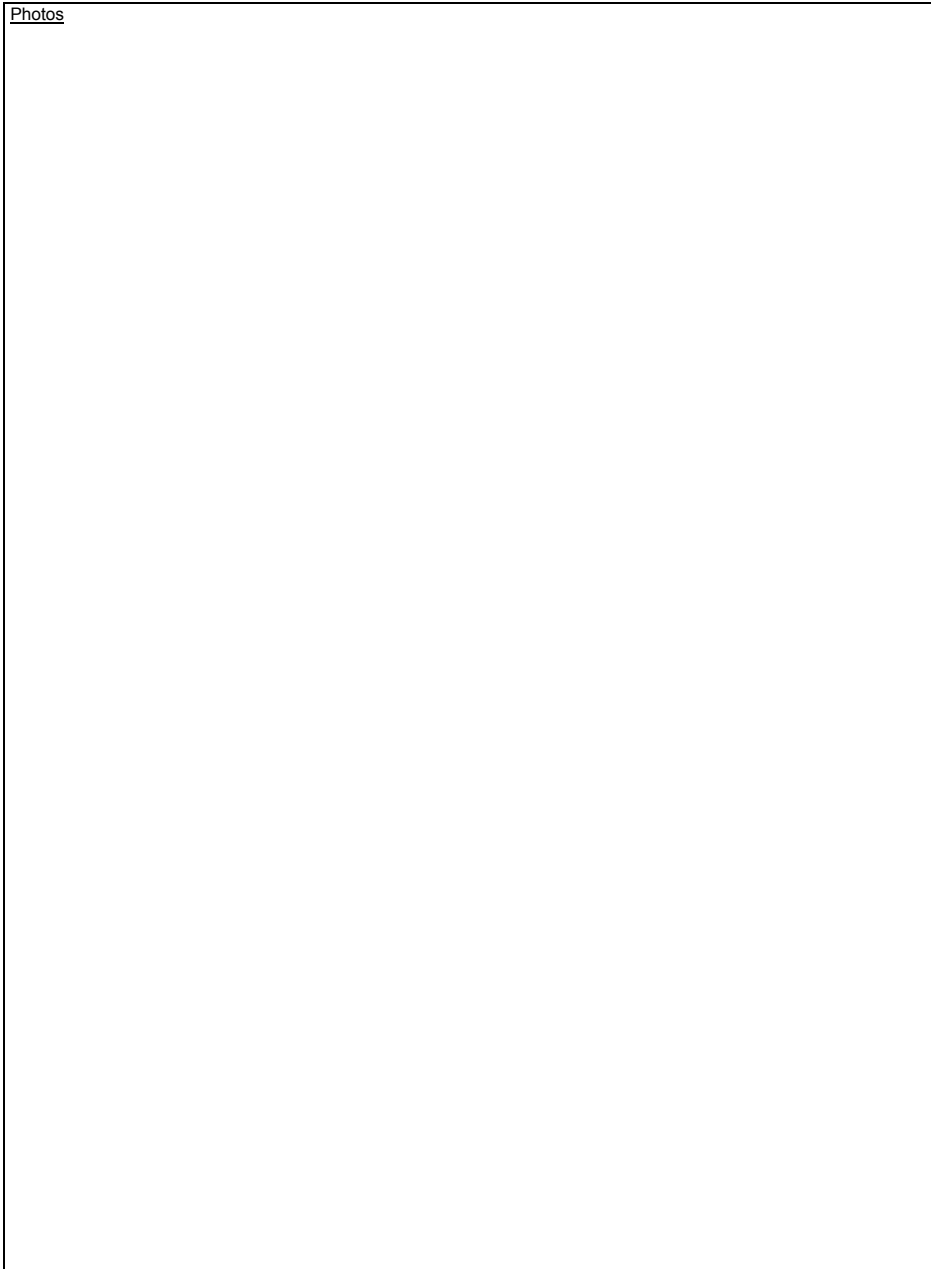
- | |
|--|
| <p>6. Company documentation:</p> <ul style="list-style-type: none"> • risk assessment • operational procedures • safety briefing • etc.... <p>7. Exact information on breaches against regulations, rules, standards:</p> <ul style="list-style-type: none"> • By whom? • Should the responsible person or the injured person have been aware of this according to their level of information? <p>8. Accidents causes: What circumstances, deficits have been leading to or contributing to the accident?</p> <ul style="list-style-type: none"> • Technology <ul style="list-style-type: none"> • failure of equipment • condition of safety technology • regular checks foreseen? results? • insufficient distances? • missing safeguards? • Organisation <ul style="list-style-type: none"> • insufficient supervision • directives • safety briefings • necessary equipment not available • lack of coordinaton • work process aganst safety rules • Person <ul style="list-style-type: none"> • mode of operation; • not using foreseen equipment; • usage not in accordance with regulations; • breach of supervisonal duty, lack of information • Workplace deficits or environmental impact <ul style="list-style-type: none"> • traffic routes • confined spaces • light and visibility • weather impact <p>9. What conclusions did the company draw?</p> <ul style="list-style-type: none"> • Initiative of company • Directive by supervising authority <p>10. Are these measures sufficient?</p> <ul style="list-style-type: none"> • What other measures are required additionally? |
|--|

Annex 2.5 (cont.) (5)

Accident ID :
Name of injured person: _____

Description of the course of the accident and conclusions

A large empty rectangular box with a solid black border, intended for the user to provide a detailed description of the accident and its conclusions. The box is currently blank.

Annex 2.5 (cont.) (6)**Accident ID :****Name of injured person:** _____Photos

Annex 2.6

Example for a report form for cases of indications of an occupational illness as used by companies in Germany

COMPANY REPORTS THE CASE OF INDICATIONS OF AN OCCUPATIONAL ILLNESS			
1 Company name and address		2 Company number of accident insurer	
3 Recipient			
4 Surname, first name of insured		5 Date of birth	
		Day	Month
		Year	
6 Street, street number		Post code	
		Town	
7 Gender		8 Nationality	
<input type="checkbox"/> male <input type="checkbox"/> female			
9 Temporary staff			
<input type="checkbox"/> yes <input type="checkbox"/> no			
10 Apprentice		11 Is the insured	
<input type="checkbox"/> yes <input type="checkbox"/> no		<input type="checkbox"/> company owner <input type="checkbox"/> spouse of company owner	
		<input type="checkbox"/> related to company owner <input type="checkbox"/> shareholder/CEO	
12 Claim for continued remuneration is in place for		13 Health insurance of insured (name, post code, town)	
weeks			
14 What are the symptoms which form the indications for this report? What does the insured complain about? What hazardous factors and substances are responsible for these complaints, in the view of the insured?			
15 What hazardous activities has the insured carried out? What type of hazardous influences and substances has he been subjected to as part of his work duties?			
16 Have medical preventative examinations been conducted? If yes, by whom and when?			
17 Have the hazard factors outlined in 15 been reviewed at the workplace of the insured (e.g. hazard assessment, measurement); if yes, what were the results?			
18 Date	Company/Authorised party	Workers' council	Telephone number for inquiries (contact)

Source:

Deutsche Gesetzliche Unfallversicherung (DGUV), umbrella association of the accident insurance institutions for the industrial and public sectors, <http://www.dguv.de/content/index.jsp>
(Unofficial translation into English)

Annex 2.7 (1)

Comprehensive, but not exhaustive list of potential parameters documenting accidents and incidents at work

Parameters of accidents and incidents at work

This list serves as a comprehensive, while not exhaustive catalogue of parameters to be considered in designing report forms.

According to the individual means, a smaller or higher number of items can be used.

Please note that some items represent hard facts and can be easily included, where others are soft factors describing individual dispositions and team interactions.

These are much harder to measure and serve more for countries or regions wanting to further their analysis to a higher level.

■ Institutional parameters

- industrial trade (mining, hospital, fishing, ...)
- section of business (maintenance, production, administration, ...)
- area of work
- work place design
- machines, tools, work aids

■ Personal parameters

- task
- age
- marital status
- nationality
- job age / years of job experience
- type of job training / qualification / education
- behaviour
- physical constitution (fatigue, ...)
- movement of the person
- relation to fellow workers
- type of communication
- level of job satisfaction
- disposition to take risks

Annex 2.7 (cont.) (2)

- Organizational parameters
 - company size
 - regional structure of workplace (confined spaces, workshop, outside, traffic, ...)
 - type of management
 - work time
 - working conditions (noise, light, heat, ...)
 - work pace
 - regulations on work breaks
 - type of payment (fixed salary, wage according to production quantity, ...)
 - level of automation

- Time related parameters
 - day
 - month
 - year
 - time
 - work hour (1., 2., 3., ...)
 - work day (1., 2, 3., ... after last work free day)

- Course of accident
 - object leading to accident
 - movement of object leading to accident

- Further parameters
 - climate
 - state of the economy

***Appendix III:
Examples of benefits
from reporting systems***



Annex 3.1 (1)

Example for key figures of occupational safety and health as part of the German National Report on Safety and Health at Work

Accident Data



Table TB 1

Reportable accidents (work accidents and commuting accidents) in the years 2007 to 2009

Type of accident	2009	2008	2007	Change			
				from 2008 to 2009		from 2007 to 2008	
				absolute	%	absolute	%
1	2	3	4	5	6	7	8
Reportable work accidents	974.642	1.063.915	1.055.797	-89.273	-8,4	+8.118	+0,8
out of this:							
statutory accident insurance institutions for the industrial sector (the BGs).....	782.736	866.190	852.032	-83.454	-9,6	+14.158	+1,7
statutory accident insurance institutions for the agricultural sector.....	88.520	92.295	96.083	-3.775	-4,1	-3.788	-3,9
public-sector accident insurers.....	103.386	105.430	107.682	-2.044	-1,9	-2.252	-2,1
Reportable commuting accidents	181.232	179.191	169.691	+2.041	+1,1	+9.500	+5,6
out of this:							
statutory accident insurance institutions for the industrial sector (the BGs).....	150.258	149.601	141.451	+657	+0,4	+8.150	+5,8
statutory accident insurance institutions for the agricultural sector.....	2.642	2.583	2.624	+59	+2,3	-41	-1,6
public-sector accident insurers.....	28.332	27.007	25.616	+1.325	+4,9	+1.391	+5,4
Reportable work and commuting accidents total	1.155.874	1.243.106	1.225.488	-87.232	-7,0	+17.618	+1,4
out of this:							
statutory accident insurance institutions for the industrial sector (the BGs).....	932.994	1.015.791	993.483	-82.797	-8,2	+22.308	+2,2
statutory accident insurance institutions for the agricultural sector.....	91.162	94.878	98.707	-3.716	-3,9	-3.829	-3,9
public-sector accident insurers.....	131.718	132.437	133.298	-719	-0,5	-861	-0,6

Source:

Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (BAuA), Germany, Federal Institute for Occupational Safety and Health, <http://www.baua.de/en/Homepage.html> (Unofficial translation into English)

Annex 3.1 (cont.) (2)



Accident Data

**New pensions (work accidents and commuting accidents)
in the years from 2007 until 2009**

Type of pension	2009	2008	2007	Change			
				from 2008 to 2009		from 2007 to 2008	
				absolute	%	absolute	%
1	2	3	4	5	6	7	8
New pensions (work accidents)	19.018	20.627	21.315	-1.609	-7,8	-688	-3,2
out of this:							
statutory accident insurance institutions for the industrial sector (the BGs).....	15.284	15.378	15.598	-94	-0,6	-220	-1,4
statutory accident insurance institutions for the agricultural sector.....	2.428	3.804	4.144	-1.376	-36,2	-340	-8,2
public-sector accident insurers.....	1.306	1.445	1.573	-139	-9,6	-128	-8,1
New pensions (commuting accidents)	6.035	5.768	6.283	+267	+4,6	-515	-8,2
out of this:							
statutory accident insurance institutions for the industrial sector (the BGs).....	5.192	4.865	5.253	+327	+6,7	-388	-7,4
statutory accident insurance institutions for the agricultural sector.....	91	139	113	-48	-34,5	+26	+23,0
public-sector accident insurers.....	752	764	917	-12	-1,6	-153	-16,7
New pensions (work and commuting accidents) total	25.053	26.395	27.598	-1.342	-5,1	-1.203	-4,4
out of this:							
statutory accident insurance institutions for the industrial sector (the BGs).....	20.476	20.243	20.851	+233	+1,2	-608	-2,9
statutory accident insurance institutions for the agricultural sector.....	2.519	3.943	4.257	-1.424	-36,1	-314	-7,4
public-sector accident insurers.....	2.058	2.209	2.490	-151	-6,8	-281	-11,3

Annex 3.1 (cont.) (3)

Accident Data



**Fatal accidents (work accidents and commuting accidents)
in the years from 2007 until 2009**

Type of accident	2009	2008	2007	Change			
				from 2008 to 2009		from 2007 to 2008	
				absolute	%	absolute	%
1	2	3	4	5	6	7	8
Fatal work accidents total¹⁾	622	765	812	-143	-18,7	-47	-5,8
out of this during work on the job-site¹⁾	476	590	597	-114	-19,3	-7	-1,2
statutory accident insurance institutions for the industrial sector (the BGs).....	298	385	393	-87	-22,6	-8	-2,0
statutory accident insurance institutions for the agricultural sector.....	148	170	173	-22	-12,9	-3	-1,7
public-sector accident insurers.....	30	35	31	-5	-14,3	+4	+12,9
during work in public traffic	146	175	215	-29	-16,6	-40	-18,6
statutory accident insurance institutions for the industrial sector (the BGs).....	123	142	180	-19	-13,4	-38	-21,1
statutory accident insurance institutions for the agricultural sector.....	18	23	20	-5	-21,7	+3	+15,0
public-sector accident insurers.....	5	10	15	-5	-50,0	-5	-33,3
Fatal commuting accidents total	375	478	521	-103	-21,5	-43	-8,3
out of this: statutory accident insurance institutions for the industrial sector (the BGs).....	327	412	460	-85	-20,6	-48	-10,4
statutory accident insurance institutions for the agricultural sector.....	13	20	18	-7	-35,0	+2	+11,1
public-sector accident insurers.....	35	46	43	-11	-23,9	+3	+7,0
Fatal accidents total	997	1.243	1.333	-246	-19,8	-90	-6,8
out of this: statutory accident insurance institutions for the industrial sector (the BGs).....	748	939	1.033	-191	-20,3	-94	-9,1
statutory accident insurance institutions for the agricultural sector.....	179	213	211	-34	-16,0	+2	+0,9
public-sector accident insurers.....	70	91	89	-21	-23,1	+2	+2,2

1) Fatal work accidents on the job-site and in public traffic

2) including accidents while traveling on business not in public traffic

Annex 3.2 (1)

Example of key figures in trade report on safety and health at work in Germany

Overview

Insurance coverage, work accidents, commuting accidents, and occupational diseases					
	2004	2005	2006	2007	2008
Companies	5.591	5.390	5.249	5.150	5.074
Insured persons	144.758	140.687	140.611	142.492	142.693
full time equivalent employees (FTE) ¹⁾	130.344	126.731	124.449	125.035	128.696
Hours worked	205.943.432	198.967.031	196.628.396	198.805.385	205.938.612
Work accidents					
Reportable work accidents	6.585	5.988	6.115	5.791	5.820
Fatal work accidents ²⁾	10	10	8	14	10
Non-reportable work accidents ³⁾	7.227	6.644	6.515	6.475	6.530
New pensions due to work accidents	251	219	209	201	187
Commuting accidents					
Reportable commuting accidents	489	513	484	416	476
Fatal commuting accidents ²⁾	9	5	2	3	3
Non reportable commuting accidents ³⁾	263	271	256	208	261
New pensions due to commuting a.	47	39	27	28	24
Occupational diseases					
Suspected cases	481	483	418	444	458
Acknowledged ⁴⁾	315	311	254	220	211
Occupational cause acknowledged ⁵⁾	6	26	23	10	23
New pensions due to occupational diseases	89	81	57	56	61
Fatalities (occupational disease)	26	24	43	32	32
Total					
Reported cases	15.045	13.899	13.788	13.334	13.545
Fatal work and commuting accidents	19	14	10	17	13
New pensions	387	339	293	285	272

1) FTE = 1,610 hours/year (2008)

4) Including non-compensated cases.

2) Only fatal work and commuting accidents where death occurred within 30 days after the accident and death occurred in reporting year.

5) Occupational cause acknowledged, insurance criteria not met.

3) Accidents with neither more than three days loss time nor resulting fatality (§ 193(1) Social Law Code Book VII).

Development of important key figures during the last 10 years

	1999	2008	
Work accidents			
Work accidents total	23.426	12.350	-47,3 %
Reportable work accidents	14.365	5.820	-59,5 %
New pensions due to work accidents	343	187	-45,5 %
Fatal work accidents	23	10	-56,5 %
Reportable work accidents per 1,000 full time equivalent employees (FTE)	81,04	45,22	-44,2 %
Occupational diseases			
Suspected cases of occupational disease	723	458	-36,7 %
New pensions due to occupational diseases	119	61	-48,7 %

Source:

Steinbruchs-Berufsgenossenschaft (StBG), the statutory accident insurance for the raw material industry and the construction materials producers in Germany, today merged into BG RCI (Berufsgenossenschaft Rohstoffe und chemische Industrie, German Social Accident Insurance Institution for the raw materials and chemical industry).
(Unofficial translation into English)

Annex 3.2 (cont.) (2)

n Statistics

Work accidents and commuting accidents

Work accidents per 1,000 full time equivalent employees (FTE)

Year	2004	2005	2006	2007	2008
Reportable work accidents	50,52	47,25	49,14	46,32	45,22
Fatal work accidents	0,08	0,08	0,06	0,11	0,08
New work accident pensions	1,93	1,73	1,68	1,61	1,45

Work accidents per one million hours worked

Year	2004	2005	2006	2007	2008
Reportable work accidents	31,97	30,10	31,10	29,13	28,26
Fatal work accidents	0,05	0,05	0,04	0,07	0,05
New work accident pensions	1,22	1,10	1,06	1,01	0,91

Work accidents per 1,000 full time equivalent employees (FTE) by sector

Year	2004	2005	2006	2007	2008
Natural stone	57,37	51,63	52,91	49,77	51,51
Concrete	65,17	61,17	62,06	62,14	66,80
Sand and gravel	44,71	44,03	46,24	41,89	41,32
Lime/Gypsum	30,12	26,35	31,07	25,96	19,41
Cement	23,46	15,10	21,07	18,40	17,79
Natural oil and gas	12,76	19,63	17,49	17,59	14,49
Readymix concrete	46,97	44,68	50,40	40,59	40,15
StBG total	50,52	47,25	49,14	46,32	45,22

Commuting accidents per 1,000 insured persons

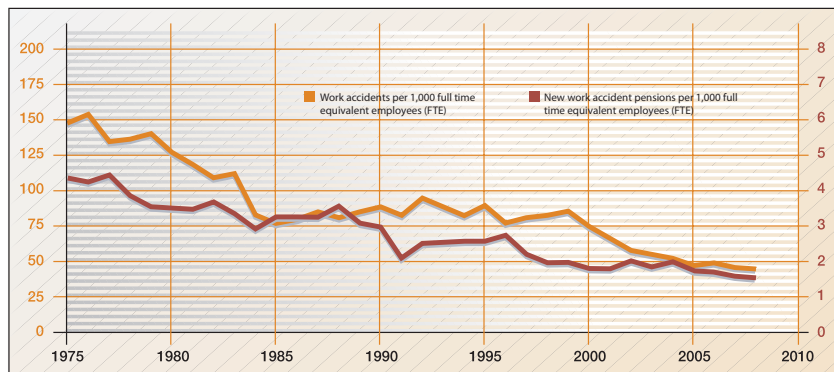
Year	2004	2005	2006	2007	2008
Reportable commuting accidents	3,38	3,65	3,44	2,92	3,34
Fatal commuting accidents	0,06	0,04	0,01	0,02	0,02
New commuting accident pensions	0,32	0,28	0,19	0,20	0,17

In almost all sectors reportable accidents show a declining tendency, as shown by the FTE-index representing the risk of an accident leading to more than three lost work days. Especially the sectors lime, gypsum, and oil/natural gas show a positive development, increasing the high level of safety once more.

Annex 3.2 (cont.) (3)

Work accidents

Development of work accidents per 1,000 full time equivalent employees (FTE)



New work accident pensions by cause

Type of accident	2004	2005	2006	2007	2008
Total	251	219	209	201	187
Containing:					
Truck	18	11	14	19	20
Fall on level (slipping, tripping)	29	28	38	15	15
Ladder	21	15	10	25	12
Fall from height	18	13	15	6	8
Falling or tilting objects	7	6	5	9	8

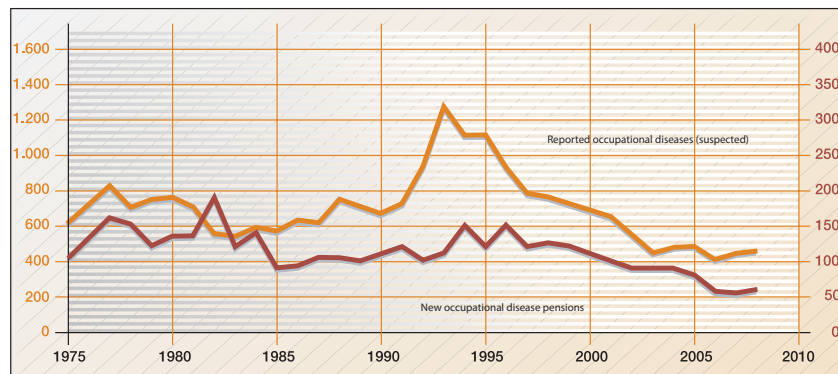
Despite of an increasing amount of worked hours the total of new accident pensions dropped by 7% compared to the year before.

Annex 3.2 (cont.) (4)

n Statistics

Occupational diseases

Development of occupational diseases



New occupational disease pensions by type

Nr.	Occupational disease	2004	2005	2006	2007	2008
	Total	89	81	57	56	61
	Containing:					
4101	Silicosis	32	33	18	17	24
2301	Noise induced hearing loss	20	23	13	8	11
4104	Asbestosis with lung cancer	7	5	1	8	7

After many years of decrease the figures show a moderate plus of five cases in the reporting year. The most frequently compensated cases are again due to silicosis and noise induced hearing loss -- typically reflecting the work situation decades ago and caused by impact over many years.

Annex 3.3

Output of accident statistics as used as part of a trade report on safety and health at work in the form of an accident description and conclusions for prevention to be applied by operators in Germany



Fig. 1 The driver of the dump truck drove backwards down this ramp to the quarry.



Fig. 3 The driver of the truck fell from his seat and hit the door. Due to the force of the impact, this door opened and the driver then fell out onto his truck's registration plate.

Serious accident with dump truck

A dump truck driver was commissioned to drive the day's production waste to a nearby quarry. The unloading area was at the bottom of a sloping ramp, which the employee had to drive down backwards in his 56-ton vehicle (Fig. 1). He used his wing mirrors to control the descent and stay within the confines of the ramp. However, when he reached a point approximately halfway down the ramp, he lost control of the vehicle and hit the right-hand wall of the quarry (Fig. 2). According to a statement made by the quarry manager, who was standing at the top end of the ramp, the dump truck then accelerated briefly and hit against the wall. On impact, the rear of the vehicle was lifted up and the vehicle tipped over. The force of the impact threw the driver out of his seat and out of the open cab door (Fig. 3). His head hit against the truck's registration plate and he was left lying unconscious on the ground. Colleagues standing in the immediate vicinity ran to the location of the accident to provide first aid. An ambulance was called, which took the injured man to a nearby hospital, where he was treated for severe head injuries. In the subsequent accident investigation, it was possible to clarify exactly what had happened. No technical faults were detected on the vehicle. Due to its year of construction, the vehicle did not have a seatbelt. It was clear that the gear lever in the cab of the dump truck had been moved into the 1st forward gear. The driver had engaged this gear in an attempt to correct the direction of travel. When changing gears, the gearbox must first be put into neutral, which interrupts the engine braking effect on the drive wheels. This is what caused the heavy vehicle to start rolling



Fig. 2 While moving backwards down the ramp, the driver came off the ramp on the left and scraped the vehicle against the embankment to the side of the ramp.



Fig. 4 The driver's seat in the truck did not have a seatbelt.

Notes on occupational safety:

Vehicles must always be checked prior to any deployment to ensure that they are in safe, working order (with particular attention being paid to brakes, lighting, warning devices, tyres, total weight, axle loads, static payload and imposed load).

Check whether the warning vest, warning triangle and first aid kit are present.

The seatbelt must be securely in place before starting the vehicle. This also applies to all internal company transport.

Vehicles should only ever be driven backwards when provisions are in place that nobody can be injured. When operating vehicles in areas with poor visibility, a second person must stand within the visual range of the driver to offer assistance.

Sufficient distance from pits, embankments and rock faces must always be maintained.

Source:

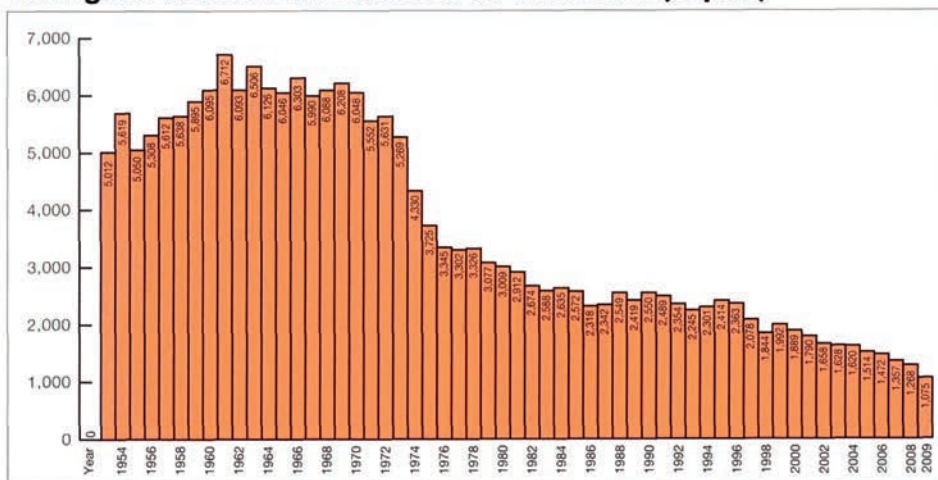
Steinbruchs-Berufsgenossenschaft (StBG), the statutory accident insurance for the raw material industry and the construction materials producers in Germany, today merged into BG RCI (Berufsgenossenschaft Rohstoffe und chemische Industrie, German Social Accident Insurance Institution for the raw materials and chemical industry).
(Unofficial translation into English)

Annex 3.4 (1)

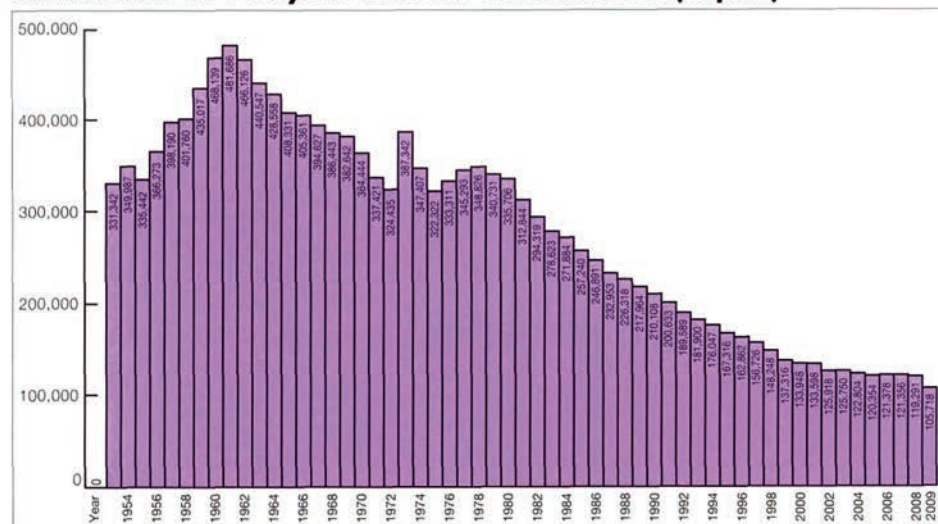
Example page from JISHA's annual report introducing statistics on fatal accidents and accidents leading to an absence of four days or more from work.

Statistics

Change in Number of Deaths in all Industries (Japan)



Change in Number of Deaths and Injuries Requiring an Absence of 4 Days or more in all Industries (Japan)



Note: The figures for 1972 and before indicate the number of deaths and injuries requiring an absence of 8 days or more

Source:

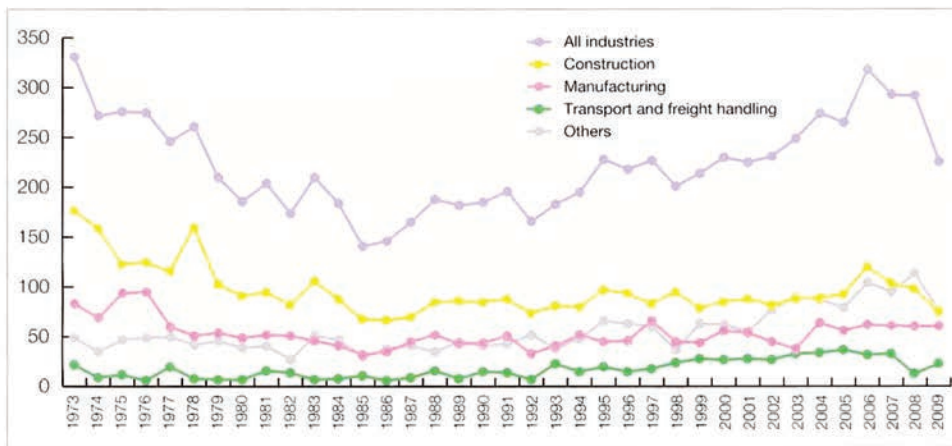
JISHA, Japan Industrial Safety and Health Association, <http://www.jisha.or.jp/english/index.html>

Annex 3.4 (cont.) (2)

Change in Serious Industrial Accidents by Industry (Japan)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
All industries	331	272	276	275	246	261	210	186	204	174	210	184	141	146	165	188	182	185	196
Construction	177	159	123	125	116	160	103	91	95	82	106	88	68	67	70	85	86	85	88
Manufacturing	83	69	94	95	60	51	54	49	52	51	46	41	32	35	45	52	43	44	51
Transport and freight handling	22	9	12	6	20	8	7	7	16	14	7	8	11	6	9	16	8	15	14
Others	49	35	47	49	50	42	46	39	41	27	51	47	30	38	41	35	45	41	43

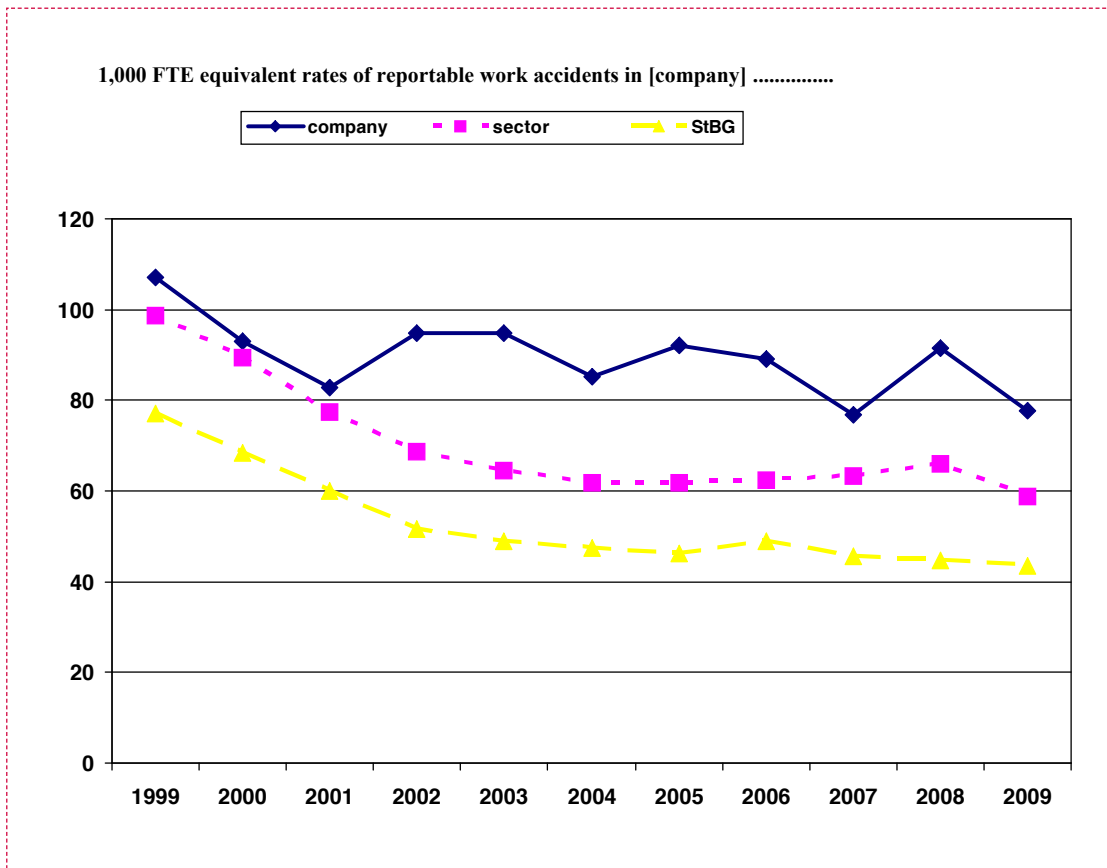
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
All industries	166	183	195	228	218	227	201	214	230	225	231	249	274	265	318	293	281	228
Construction	74	81	80	97	94	83	95	79	85	88	82	88	89	93	120	104	93	75
Manufacturing	33	41	52	45	46	66	45	44	56	54	45	38	64	56	62	61	58	55
Transport and freight handling	7	23	15	20	15	18	24	28	27	28	27	33	34	37	32	33	13	21
Others	52	38	48	66	63	60	37	63	62	55	77	90	87	79	104	95	117	77



Note: "Serious industrial accident" signifies an accident resulting in three or more deaths and/or injuries at a time.

Annex 3.5

Example for benchmarking an individual company in Germany against the whole trade and the industry as a whole. The unit is work accidents per 1,000 full-time employees; the comparison spans a ten-year time frame




Source:

Steinbruchs-Berufsgenossenschaft (StBG), the statutory accident insurance for the raw material industry and the construction materials producers in Germany, today merged into BG RCI (Berufsgenossenschaft Rohstoffe und chemische Industrie, German Social Accident Insurance Institution for the raw materials and chemical industry).
(Unofficial translation into English)

Annex 3.6

Overview of a specific mine's parameters as available online in the USA




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Mine Safety and Health Administration
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Mine Data Retrieval System
as developed by PEIR

Mine Overview

Current Mine Information

Mine ID:	[REDACTED]
Operator:	[REDACTED]
Opr. Begin Date:	Unknown
Mine Name:	[REDACTED]
Current Controller:	[REDACTED]
Mine Status:	Active
Status Date:	3/1/1990
Mined Material:	Coal (Bituminous)
Type of Mine:	Surface
Location:	[REDACTED]
State:	PA

Operator History for Mine ID: [REDACTED]

Operator Name	Begin Date	End Date
[REDACTED]	Unknown	

[How do I use this information? Click Here](#)

Please note that the information provided by the Data Retrieval System is based on data gathered from various MSHA systems. As there may be a lag time in data being entered into those systems, there will also be a lag in the reflection of that data on the DRS.

Injuries, Hours Worked and Production Totals

The ownership date for this operator is unavailable

Year	Fatal Operator Injuries	NFDL Operator Injuries	Fatal Contractor Injuries	NFDL Contractor Injuries	Operator Hours Worked*	Coal Produced (tons)	Operator Fatal Incidence Rate**	Operator NFDL Incidence Rate**	Mine Type National Fatal Incidence Rate**	Mine Type National NFDL Incidence Rate**
2000	0	0	0	0	4,263	4,498	0.00	0.00	0.0233	2.24
2001	0	0	0	0	4,845	6,079	0.00	0.00	0.0090	2.12
2002	0	0	0	0	4,659	5,925	0.00	0.00	0.0180	2.29
2003	0	0	0	0	3,965	0	0.00	0.00	0.0289	1.94
2004	0	0	0	0	5,376	0	0.00	0.00	0.0121	1.76
2005	0	0	0	0	2,340	0	0.00	0.00	0.0028	1.50
2006	0	0	0	0	2,674	0	0.00	0.00	0.0189	1.36
2007	0	0	0	0	1,728	333	0.00	0.00	0.0194	1.39
2008	0	0	0	0	908	460	0.00	0.00	0.0102	1.25
2009	0	0	0	0	804	198	0.00	0.00	0.0106	1.22
2010	0	0	0	0	845	0	0.00	0.00	0.0081	1.12
2011	0	0	0	0	38	0	0.00	0.00	0.0105	1.13

* Hours worked and accidents & injuries now include office hours or accidents (subunit 99).
** Current rates are based on data available as of 2011 Quarter 1. For a further explanation, please see this.

Citations, Orders and Safeguards

The ownership date for this operator is unavailable

Year	104(a)	Proposed Penalties (\$)	Current Penalties (\$)	Amount Paid To Date (\$)
2000	0	0.00	0.00	0.00
2001	4	273.00	273.00	273.00
2002	0	0.00	0.00	0.00
2003	1	55.00	55.00	55.00
2004	1	72.00	72.00	72.00
2005	0	0.00	0.00	0.00
2006	0	0.00	0.00	0.00
2007	0	0.00	0.00	0.00
2008	0	0.00	0.00	0.00
2009	2	227.00	227.00	227.00
2010	1	100.00	100.00	100.00
2011	0	0.00	0.00	0.00

Note: Vacated Citations are not included in any reports on the DRS.

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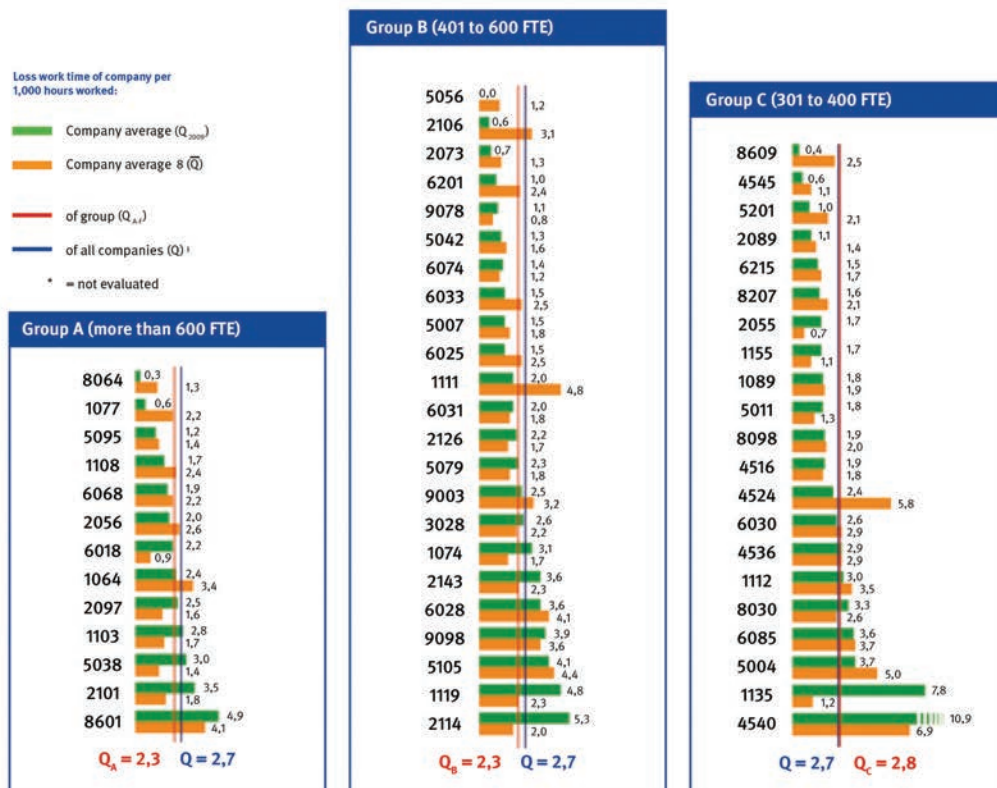
Mine Safety and Health Administration (MSHA) | 1100 Wilson Boulevard, 21st Floor Arlington, VA 22209-3939
www.msha.gov | Telephone: (202) 693-9400 | Fax-on-demand: (202) 693-9401

Annex 3.7 (1)

Comparison of lost work hours due to accidents per 1,000 work hours, divided into the groups in Germany

- A – more than 600 full-time employees
- B – 401 to 600 full-time employees
- C – 301 to 400 full-time employees
- D – 201 to 300 full-time employees
- E – 101 to 200 full-time employees
- F – 60 to 100 full-time employees

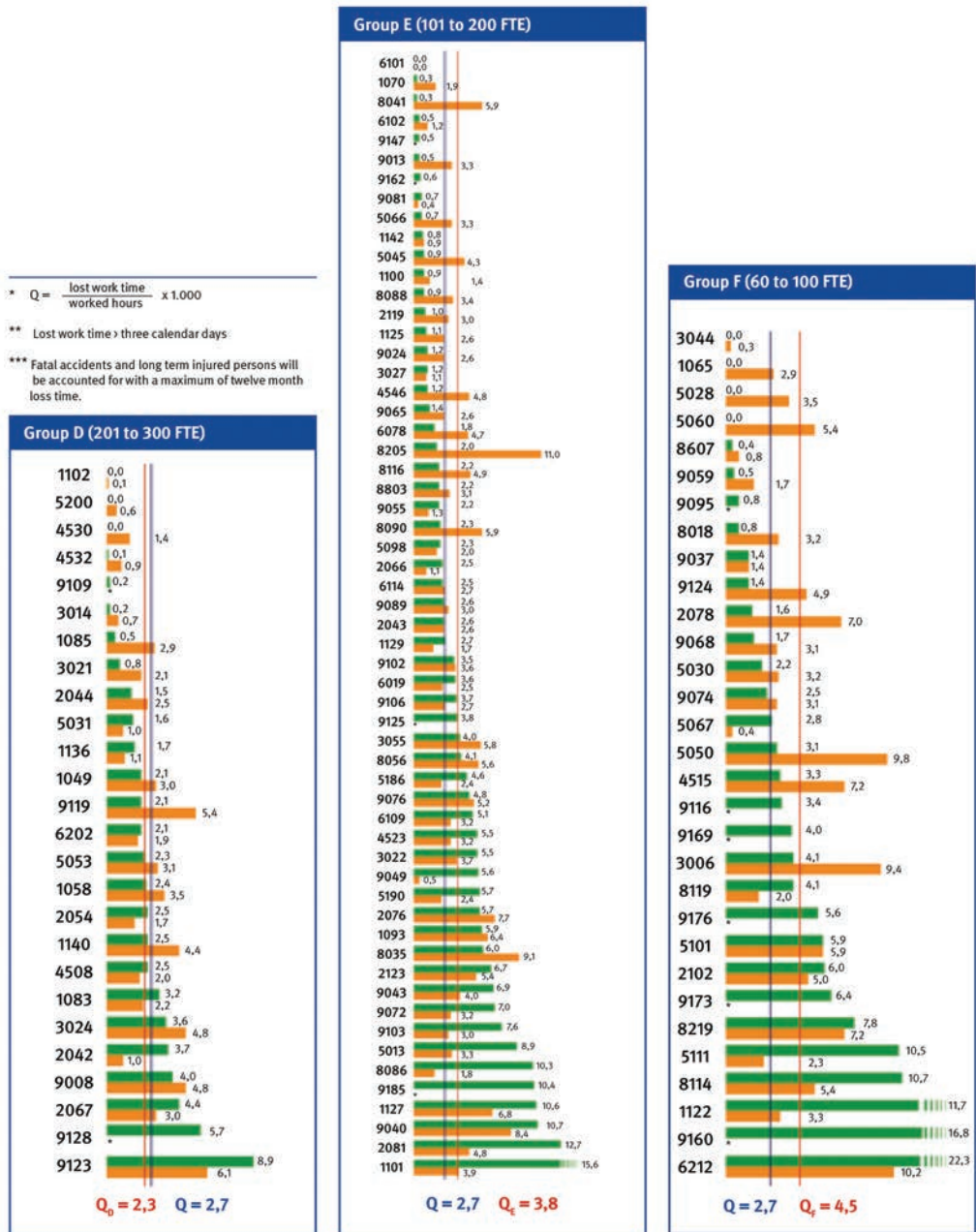
Each company is viewed according to the last year (in this case 2008), and a four-year average 2004–2007. Each company is also benchmarked against the average of its group (A–F), and the industry as a whole.



Source:

BG RCI, Berufsgenossenschaft Rohstoffe und chemische Industrie, German Social Accident Insurance Institution for the raw materials and chemical industry.
(Unofficial translation into English)

Annex 3.7 (cont.) (2)

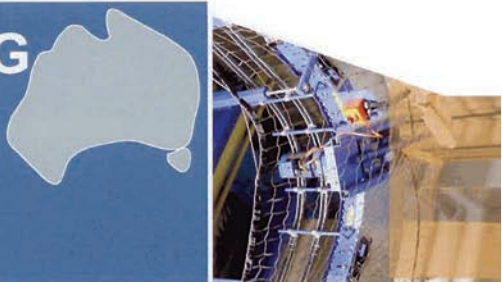


Annex 3.8 (1)

Information sheet on the Australian manufacturing industry as published by Safe Work Australia

INFORMATION SHEET

MANUFACTURING



The Manufacturing industry employed 1 005 000 people in 2008–09, representing 10% of the Australian workforce. Within this industry, 93% of workers were classed as employees and were covered for workers' compensation. In 2008–09 employers in this industry paid 2.5% of payroll to cover their employees for workers' compensation. The following statistics are from Safe Work Australia's workers' compensation claims database.

SERIOUS CLAIMS

In 2008–09, 17% of all serious workers' compensation claims were made by employees in the Manufacturing industry (22 510 claims). This equates to 62 employees each day requiring one or more weeks off work because of work-related injury or disease.

The incidence rate of serious claims in the Manufacturing industry has fallen slightly, from 29 claims per 1000 employees in 2000–01 to 25 claims per 1000 employees in 2007–08 (see Figure 1). However, it remains the highest rate of all industries in 2007–08.

The most common causes of compensated injury and disease in the Manufacturing industry in 2008–09 were:

- > muscular stress (due to manual handling or repetitive movement), which accounted for 41% of claims
- > *being hit by moving objects*, which accounted for 18% of claims, and
- > *falls, trips and slips of a person*, which accounted for 15% of claims.

FATALITIES

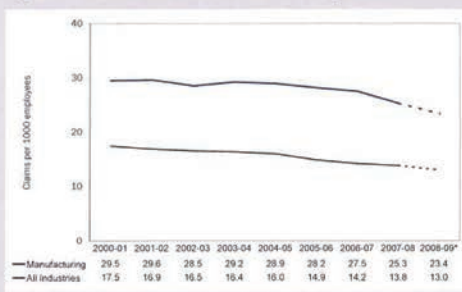
From 2000–01 to 2007–08, the number of compensated fatalities in the Manufacturing industry ranged between 32 and 45.

There were 28 fatalities recorded in the preliminary data for 2008–09. This corresponds to a fatality incidence rate of 2.9 fatalities per 100 000 employees, which is slightly higher than the rate for all industries of 2.3.

Over the past three years the most common causes of fatality in the Manufacturing industry were:


- > vehicle incidents, which accounted for 21% of fatalities
- > being hit by falling or moving objects, also accounting for 21% of fatalities, with *being hit by falling objects* accounting for 11% and *being hit by moving objects* accounting for 9%, and
- > *long term contact with chemicals and substances* (often resulting in occupational diseases), which accounted for 20% of fatalities.

Figure 1: Incidence rate of serious compensated claims




	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09*
Manufacturing	29.5	29.6	28.5	29.2	28.9	28.2	27.5	25.3	23.4
All Industries	17.5	16.9	16.5	16.4	16.0	14.9	14.2	13.8	13.0

*Data for 2008–09 are preliminary and are subject to change



safe work australia



Source:

Safe Work Australia. <http://www.safeworkaustralia.gov.au/sites/SWA/Pages/default.aspx>

Annex 3.8 (cont.) (2)

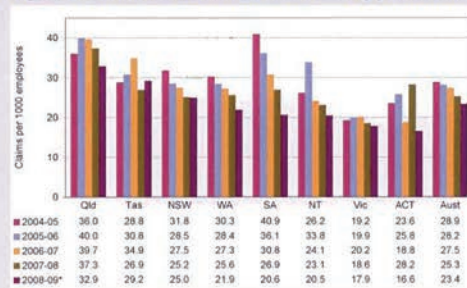
MANUFACTURING



SERIOUS CLAIMS BY JURISDICTION

Figure 2 shows the incidence rates of serious compensation claims in the Manufacturing industry over the past five years by jurisdiction. These data show considerable variability within some jurisdictions over this period. In 2008–09, Queensland recorded the highest incidence rate at 33 claims per 1000 employees, while the Australian Capital Territory recorded the lowest rate at 17 claims per 1000 employees. South Australia recorded a substantial decrease in incidence rates (34%) between 2004–05 and 2007–08, followed by New South Wales (21%). The Australian Capital Territory recorded a 20% increase over the same period.

Figure 2: Serious claims: Incidence rates by jurisdiction

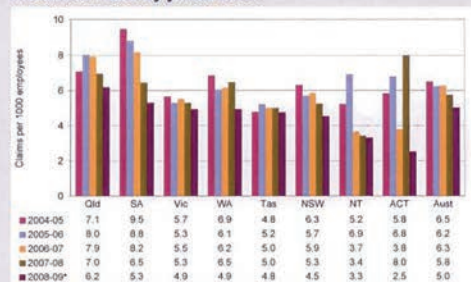


*Data for 2008–09 are preliminary and are subject to change.

CLAIMS INVOLVING TWELVE OR MORE WEEKS TIME LOST BY JURISDICTION

In 2008–09, 21% of serious claims involved twelve or more weeks off work. In 2008–09, Queensland recorded the highest incidence rate in the Manufacturing industry (6 claims per 1000 employees), while the Australian Capital Territory recorded the lowest (3 claims per 1000 employees). Figure 3 shows that there have been improvements over the past few years at the national level in incidence rates of claims involving twelve or more weeks off work in the Manufacturing industry. Overall, with the exception of Tasmania and the Australian Capital Territory, each jurisdiction has recorded a decrease over the four-year period (2004–05 to 2007–08), with South Australia recording the largest decrease (34%).

Figure 3: Claims involving 12 or more weeks off work: Incidence rates by jurisdiction



*Data for 2008–09 are preliminary and are subject to change.

More information on the priority industries is contained in the Compendium of Workers' Compensation Statistics, which can be found at safeworkaustralia.gov.au

These data were extracted from the National Data Set (NDS) for compensation statistics which includes all accepted injury and disease claims. Serious claims include all fatalities, all claims for permanent disability and claims for conditions that involve one or more weeks of time lost from work. Serious claims do not include those involving journeys to and from work. More information on these data can be found at safeworkaustralia.gov.au.

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Annex 3.9

List used for classifying machines and equipment within the Germany aggregates industry

**Equipment: Catalogue of GBP Characteristics Code
for Classifying Accident Reports
as of January 2001**

(Excerpt)

Code	Characteristics
10 000	Machinery and equipment
10 100	Continuous conveyor
10 101	Belt conveyor
...	...
10 200	Ground transportation device
10 201	Forklift
...	...
10 300	Vehicles
10 301	Truck
...	...
10 400	Earth moving machinery
10 401	Excavator
...	...

Source:

Based on a table by the Steinbruchs-Berufsgenossenschaft (StBG), the statutory accident insurance for the raw material industry and the construction materials producers in Germany, today merged into BG RCI (Berufsgenossenschaft Rohstoffe und chemische Industrie, German Social Accident Insurance Institution for the raw materials and chemical industry).
(Unofficial translation into English)

Appendix IV: **Online resources**

- **International Standard Industrial Classification of all Economic Activities, Rev.3.1**
<http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=17>

- **International Standard Classification of Occupations [ISCO 88] (Occupation of the Victim)**
<http://www.ilo.org/public/english/bureau/stat/isco/isco88/index.htm>

- **List of NACE Codes (Economic Activity of the Employer)**
http://ec.europa.eu/competition/mergers/cases/index/nace_all.html

- **ESAW classification system for Type of Injury**
- **ESAW classification system for Part of Body Injured**
- **ESAW classification system Working Process**
- **ESAW classification system Working Environment**
- **ESAW classification system Specific Physical Activity**
- **Specific Physical Activity Deviation**
- **Specific Physical Activity Contact - Mode of injury**
http://ec.europa.eu/eurostat/ramon/statmanuals/files/ESAW_2001_EN.pdf

- **Please also visit** <http://ec.europa.eu/europeaid/what/social-protection>

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