



International
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Quick guide on sources and uses of statistics on occupational safety and health

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► Quick Guide on sources and uses of statistics on occupational safety and health

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1. Introduction

Occupational safety and health is a core aspect of decent work. Decent work is safe work. All workers should be safe in their workplaces, reassured that they are not exposed to undue risks and hazards. The physical conditions and mental demands of the workplace, and the work environment in general, have a strong impact on workers' well-being and living conditions. Occupational accidents and diseases have a significant human, social and economic cost, which we should strive to eliminate by ensuring that all workplaces are safe.

The importance of occupational safety and health was recognized in the 2030 Agenda for Sustainable Development, a universal call to action to end poverty, protect the planet and promote sustainable development everywhere, encapsulated in 17 Goals adopted by all UN member States in 2015. Occupational safety and health is so vital to decent work and sustainable development that within Sustainable Development Goal 8, which focuses on decent work and economic growth, Target 8.8 refers to the protection of labour rights and the promotion of safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment. Occupational health is also present in Sustainable Development Goal 3, which is devoted to ensuring everyone's health and well-being.¹

Great efforts have been made in the last decades to promote safety and health at work in some parts of the world, including numerous awareness campaigns and enhanced workplace inspections. Efforts have also included global initiatives, such as the Vision Zero Fund, fostered by the G7, endorsed by the G20, funded by the European Commission, France, Germany, Norway, Sweden, the United Kingdom and the United States among others, and administered and implemented by the ILO. The Vision Zero Fund brings together governments, employers' and workers' organizations, companies, and other stakeholders in their joint pursuit to achieving the goal of eliminating severe and fatal occupational accidents, injuries and diseases in global supply chains.² Unfortunately, however, too many workers are still exposed to undue risks in their workplaces, work accidents are still far too common, and too many work-related risk factors are left unchecked, leading to occupational injuries and diseases that could have been prevented.

In the context of the COVID-19 pandemic, occupational safety and health has taken on even greater importance. The health emergency reminded the international community why occupational safety and health has to be universally guaranteed. Also, the need for continued essential services during lockdowns, provided by workers exposed to increased risk of coronavirus infection such as health workers, cleaners, food supply workers, and postal and delivery workers, brought to light deficits in their workplace safety and health and the dire implications this can have for society at large.

In an effort to stop or at least slow down the spread of the virus, new working arrangements have emerged, including widespread teleworking. Moreover, to counter the economic difficulties resulting from lockdown measures, businesses have resorted to various strategies, including dismissals, temporary lay-offs, furloughs, working time reduction and wage cuts. This unprecedented situation highlights the need to ensure the occupational safety and health of all workers, including those working remotely from home and those temporarily or indefinitely not at work.

Every year on the 28th of April the ILO celebrates the World Day for Safety and Health at Work, an annual international campaign to promote safe, healthy and decent work. Recognizing the grim impact of the pandemic on working conditions around the world, and particularly on occupational safety and health, the

¹ For more information on the 2030 Agenda for Sustainable Development refer to the [UN's website on the Sustainable Development Goals](#).

² For more information on The Vision Zero Fund, refer to: [https://www.ilo.org/global/about-the-ilo/how-the-ilo-works/departments-and-offices/governance/labadmin-osh/programmes/vzf/lang-en/index.htm#:~:text=The%20Vision%20Zero%20Fund%20\(VZF,diseases%20in%20global%20supply%20chains](https://www.ilo.org/global/about-the-ilo/how-the-ilo-works/departments-and-offices/governance/labadmin-osh/programmes/vzf/lang-en/index.htm#:~:text=The%20Vision%20Zero%20Fund%20(VZF,diseases%20in%20global%20supply%20chains).

2020 campaign focussed on promoting the adoption of occupational safety and health measures to prevent and mitigate health risks, including those arising from new working arrangements.³

Given the importance of occupational safety and health, it is crucial to have timely and reliable information on the state of occupational safety and health around the world, and especially the safety and health deficits requiring prompt action by authorities, policy makers and social partners.

Statistics on occupational safety and health, including on occupational fatalities, injuries and diseases, are essential to assess the extent to which occupational hazards are prevented or controlled and workers are protected from work-related hazards and risks. Occupational safety and health statistics also inform the adoption of effective measures and campaigns to prevent and mitigate work-related risks. However, the production of reliable occupational safety and health statistics is not without challenges. Perhaps the main one remains the lack of available data on occupational safety and health in many countries around the world, others include problems of data timeliness, frequency, coverage, comparability and reliability.

This guide gives an overview of the main aspects of occupational safety and health statistics, including their relevance and uses. It also presents the international standards governing occupational safety and health statistics, as well as a description of the most commonly used occupational safety and health indicators. The guide also reviews the various types of potential sources of occupational safety and health statistics, highlighting their advantages and disadvantages. Finally, the guide points to the main challenges surrounding the compilation, dissemination and interpretation of occupational safety and health statistics.

This guide is intended as an introductory manual to occupational safety and health statistics, providing valuable but non-exhaustive information. It is a useful reference tool for data producers of occupational safety and health statistics, researchers, labour market analysts, social partners, and data users interested in occupational safety and health.

2. Relevance, uses and scope of statistics on occupational safety and health

2.1. Importance of occupational safety and health in societies and economies

A safe and sound working environment ensuring occupational safety and health at work is at the core of decent work and the quality of employment. Occupational safety and health is a key contributing factor to workers' (and their families') well-being and living conditions. The general level of health and well-being has an impact at the aggregate level for communities at large. The role of occupational safety and health in labour markets is critical. It significantly impacts on the quality of employment, and is linked to broader social and economic dimensions such as economic performance, productivity, consumption and expenditure. Thus, the degree to which occupational safety and health is secured has an impact on labour market outcomes at the macro and microeconomic levels.

The latest ILO estimates indicate that more than 2.78 million workers around the world die per year as a result of occupational accidents or diseases, and some 374 million non-fatal work-related injuries take place. The human cost of occupational safety and health deficits is vast and unacceptable. The same ILO

³ For more information on the 2020 World Day for Safety and Health at Work, refer to: https://www.ilo.org/global/topics/safety-and-health-at-work/events-training/events-meetings/world-day-safety-health-at-work/WCMS_739669/lang--en/index.htm.

estimates place the economic burden of poor occupational safety and health practices at almost 4 per cent of global gross domestic product each year.⁴

Indeed, occupational safety and health bears particular significance for communities, societies and economies. The consequences of occupational safety and health deficits can be dire not just for workers and their families, but for society at large as well, and both for the labour market and the economy. The overall costs of occupational accidents and diseases are often much greater than immediately perceived. They include human, social, and economic costs. The human costs alone are enough to justify the pursuit of universal occupational safety and health, but these add to economic costs borne by employers, workers and societies. Employer costs include direct costs such as those related to compensation of workers who have suffered from an injury or disease and indirect costs such as decreased production or productivity. Worker costs can also be varied, including income loss due to injury or illness, cost of medical treatments (not compensated by the employer or the social insurance), and more indirect costs such as facing poorer economic prospects after an occupational accident or disease. The costs to society can manifest through costs to public or private health insurances, for instance.

Investing in occupational safety and health reduces all these costs, while also improving performance, productivity and worker morale. Recognizing that decent work is safe work, the ILO aims to raise awareness of the human, social and economic returns of investment in occupational safety and health, placing the health and safety of all workers on the international agenda to boost the adoption of effective measures at the national and enterprise levels.

Occupational safety and health leads to prosperity and development in several spheres, including the social and economic spheres, and even the environment in cases where measures taken for the sake of workers and communities benefit the planet as well.

However, to have a reliable picture of the state of occupational safety and health and ensure that progress is actually taking place, timely, accurate and comparable statistics are needed.

2.2. Uses of occupational safety and health statistics

Given the importance of occupational safety and health on workers' well-being, living conditions, labour market performance, and economic outcomes, it is crucial to have reliable and timely data so as to assess the extent of occupational risks and hazards.

Statistics on occupational safety and health provide information on the context in which workers and employers operate, including the particularities of the health system, the social protection system, and the corresponding legal framework. They enable assessments of the state of workers' safety and health and the identification of areas of particular concern, pointing to the need for research, regulation, improvements or targeted campaigns. Indeed, occupational safety and health statistics can be used to plan preventive measures that could have a great positive impact. Statistics are also useful in the evaluation of the results of measures and policies, systems and programmes implemented at international, national and enterprise levels and can reveal progress or deterioration of occupational safety and health.

Reliable, relevant, accurate and timely occupational safety and health indicators are valuable tools to support policy formulation and implementation and decision-making on the matter. They are also highly useful for social partners (trade unions, employers and/or employers' organizations) to be aware of the situation and decide what needs to be changed and how. By knowing the risks associated with their work

⁴ <https://www.ilo.org/global/topics/safety-and-health-at-work/lang--en/index.htm>

and workplaces, employers, employers' organizations, workers and workers' organizations can take an active part in their own safety.

Statistics on occupational accidents, injuries and diseases are crucial to assess how safe and secure working environments are. They inform on workers' exposure to risks at work and can reveal which groups of workers are the most vulnerable. This can help policy makers in concentrating their efforts so that measures taken are as impactful as possible, for instance by designing specific safety campaigns or more effectively targeting inspection visits. Also, statistics are useful to identify new hazards and emerging risks.

Although the main objective of occupational safety and health indicators is perhaps to provide information for prevention purposes, they may be also used for a number of other purposes, such as estimating the consequences of occupational accidents (for instance in terms of work days lost, income lost or production lost), which in turn can raise awareness on the importance of occupational safety and health.

In adopting the 2030 Agenda for Sustainable Development and the 17 Sustainable Development Goals contained in it, the international community recognized the importance of statistics and monitoring in the achievement of the goals. With that in mind, a Global Indicator Framework was designed to monitor progress towards the achievement of each Sustainable Development Goal and Target. Regarding Target 8.8 (Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment), this indicator framework includes an indicator on the fatal and non-fatal occupational injury rates by sex and migrant status (SDG indicator 8.8.1).⁵

2.3. Scope of occupational safety and health statistics

The scope of occupational safety and health statistics can potentially be very wide and cover a vast array of topics related specifically to occupational safety and health, or more generally to the context in terms of social protection, health, labour market, the economy and the legal framework.

Within their most narrow scope, occupational safety and health statistics cover anything related to occupational accidents, injuries and diseases (their number, their type and characteristics, the characteristics of the workers concerned, their frequency, etc.), compensation related to occupational accidents and diseases and notification schemes (number of employers and workers covered, their characteristics, etc.).

To understand the state of occupational safety and health it is necessary to analyse it within its context. It is also important to have relevant information on the labour market, and particularly, on its composition: the share of employees, the share of informal employment, the sectoral composition of employment, the distribution of employment across the national territory, etc. It is particularly important to have statistics on the reference population for authorities monitoring occupational safety and health, with information on the type of workers and sectors covered. It is also crucial to have information on the social protection system, its coverage and scope, particularly regarding coverage in the event of a work injury or disease, and on the health system, as well as on occupational health systems.

Indicators on the size of the economy, economic performance, economic growth, and inequalities are also useful to provide context to occupational safety and health measures.

Moreover, indicators on occupational injuries are complementary to those on labour inspection, given that labour inspection is one of the main mechanisms to monitor occupational safety. Labour inspection statistics play an important role in the development of national policies, systems, programmes and

⁵ More information on the SDG Global Indicator Framework is available at: <https://unstats.un.org/sdgs/>

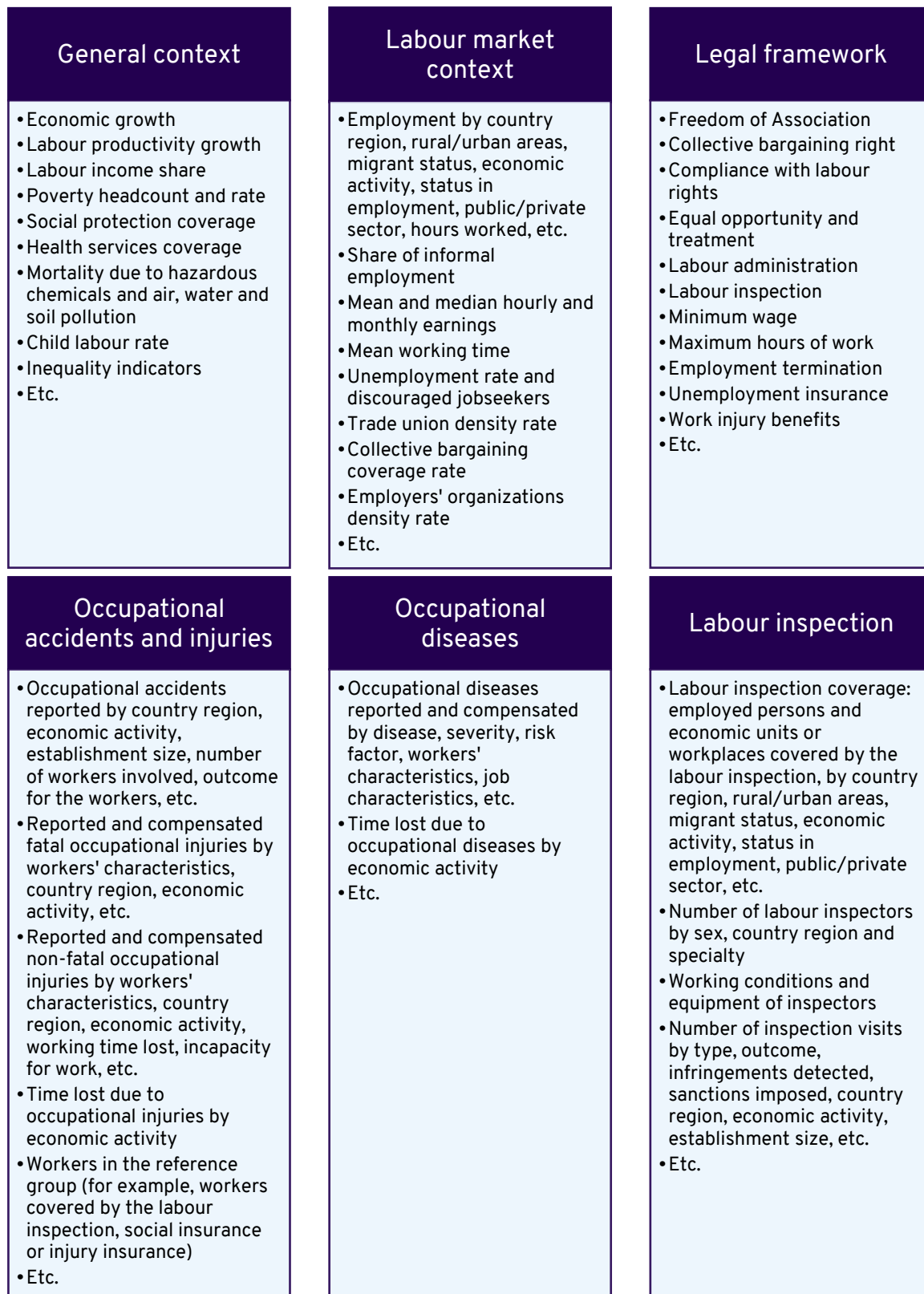
strategies for labour inspection, which in turn contribute to improved occupational safety and health. Relevant labour inspection statistics include (but are not limited to) the number of labour inspectors (especially compared to the number of workplaces liable to labour inspection), the number of inspection visits conducted, and the number of infringements recorded.

It is noteworthy that a comprehensive occupational safety and health information system would include both statistical (quantitative) indicators and qualitative indicators (for instance, legal framework or governance indicators).

To the extent possible, data should be disaggregated using all the relevant breakdowns, as disaggregated data pinpoints the differences across population groups and areas and reveals challenges faced by specific groups or regions. Useful disaggregations include sex, age, status in employment (employees versus self-employed), economic activity (sectors), occupation, urban or rural areas, and migrant or national workers, to name a few.

Figure 1 summarizes the key items of data collection related to occupational safety and health statistics.

► **Figure 1. The scope of occupational safety and health statistics**



3. International standards on occupational safety and health statistics

3.1. International labour standards

International labour standards are legal instruments setting out basic principles and rights at work at the international level, drafted and adopted by the ILO constituents (governments, employers and workers) during the International Labour Conferences. International labour standards can be Conventions, which are legally-binding for ratifying countries, or Recommendations, which serve as non-binding guidelines. After the adoption of a Convention, ILO member States are required to submit them to their parliament or the competent authority for consideration of ratification. Ratifying countries commit to implementing the Convention by integrating it into their national law and ensuring its application in practice. They also commit to reporting regularly to the ILO on the application of the Convention.

The field of occupational safety and health statistics is governed by several international labour standards. The [Occupational Safety and Health Convention](#) (Convention 155, adopted in 1981) provides for the adoption of a coherent national occupational safety and health policy, and it lays out actions to be taken by governments and within enterprises to promote occupational safety and health to improve working conditions. The importance of statistics on occupational accidents and diseases is recognized in this Convention, which includes an obligation to produce them annually. More recently, the [Protocol of 2002 to the Occupational Safety and Health Convention](#) addressed the need to strengthen recording and notification procedures for occupational accidents and diseases and to promote the harmonization of recording and notification systems to favour the design of preventive measures.

Also, the [Labour Inspection Convention](#) (Convention 81, adopted in 1947), which establishes the basic principles of labour inspection systems, includes an obligation for the central national inspection authority to publish an annual report including statistics on the labour inspection staff and activities, as well as on occupational accidents and diseases known to the labour inspection. Since the labour inspection is central in monitoring and enforcing occupational safety and health, this is an important document for both areas.

The [Promotional Framework for Occupational Safety and Health Convention](#) (Convention 187, adopted in 2006) lays out the basic requirements for suitable occupational safety and health systems, including data collection and analysis.

Recognizing that the right of everyone to occupational safety and health includes access to a world of work free from violence and harassment, the International Labour Conference adopted in its Centenary Session the [Violence and Harassment Convention](#) (Convention 190, adopted in 2019). Although this Convention does not explicitly call for the compilation of relevant data on instances of violence and harassment at work, it does call for the monitoring and enforcement of laws and regulations and awareness-raising, all of which require (or at least would be better off with) reliable data.

The [Labour Statistics Convention](#) (Convention 160, adopted in 1985) lays out the basics for a suitable national labour market statistics system, emphasizing not only the importance of data availability on the main areas of labour statistics, but also the need for transparent and robust methodologies. Countries ratifying this Convention commit to regularly produce and disseminate statistics on a range of different labour market aspects, including occupational injuries and diseases, where possible disaggregated by economic activity.

3.2. International standards of labour statistics: the Resolution concerning statistics of occupational injuries (resulting from occupational accidents)

There are two types of international standards of labour statistics: Conventions and Recommendations adopted by the International Labour Conference (discussed in section 3.1) dealing with statistics, and Resolutions and Guidelines adopted by the International Conferences of Labour Statisticians.

The main international standard dealing specifically with the compilation and dissemination of occupational safety and health statistics is the [Resolution concerning statistics of occupational injuries \(resulting from occupational accidents\)](#), adopted by the Sixteenth International Conference of Labour Statisticians held in 1998.

This Resolution provides information on the objectives and uses of occupational injuries statistics, as well as on the main possible sources of data. It also presents the standard definitions for the key concepts pertaining to occupational accidents and injuries, and lists the main data items to be collected and disseminated.

The definitions set out in this Resolution are the international standard definitions guiding the production of reliable and comparable statistics at the international level, including for monitoring of the Sustainable Development Goals. It is noteworthy that occupational accidents, injuries or diseases may be defined differently for statistical purposes than for labour inspection purposes, notification or compensation purposes. To the extent possible, the production of occupational safety and health statistics should be based on the standard statistical definitions.

3.3. ILO methodology for the harmonization of labour inspection statistics

Acknowledging the key role played by labour inspection statistics in the development of national policies, systems, programmes and strategies for labour inspection, and realizing that the compilation, analysis, and use of labour inspection data varies widely from one country to another, the ILO advocates for the harmonization of labour inspection statistics.

Based on in-depth studies conducted in countries of all regions, the ILO produced a report urging for the use of a common methodology for labour inspection statistics, and laying out the main aspects of such a methodology, entitled [Guide on the Harmonization of Labour Inspection Statistics](#).

Given the strong link between labour inspection systems and occupational safety and health, this report is a valuable document also for the field of occupational safety and health statistics.

3.4. Main concepts and definitions of occupational safety and health statistics

The main concepts and definitions used in the field of occupational safety and health statistics are listed below in alphabetic order. The definitions presented here are international standard definitions taken from the [Resolution concerning statistics of occupational injuries \(resulting from occupational accidents\)](#), other relevant resolutions adopted by the International Conferences of Labour Statisticians, ILO Conventions or other official documents of international standing such as the [ILO Manual on Decent Work Indicators](#).

Commuting accident: an accident occurring on the habitual route, in either direction, between the place of work or work-related training and the worker's principal or secondary residence, the place where the

worker usually takes his or her meals, or the place where he or she usually receives his or her remuneration; which results in death or personal injury.

Economic units or workplaces liable to labour inspection: economic units or workplaces that are subject to labour inspection according to national legislation.

Gender-based violence and harassment: violence and harassment (including sexual harassment) directed at persons because of their sex or gender, or affecting persons of a particular sex or gender disproportionately.

Incapacity for work: inability of the victim, due to an occupational injury, to perform the normal duties of work in the job or post occupied at the time of the occupational accident. Incapacity for work can be temporary or permanent.

Inspection visit: an inspection visit occurs every time one or more inspectors visit an economic unit in person to verify compliance with labour legislation. An inspection visit is a specific type of inspection action.

Labour inspector: a public official named or recruited as labour inspector (including sub-inspectors, labour controllers, or similar categories) and who undertakes advisory, control and monitoring tasks with respect to labour laws and regulations, and who is responsible for initiating sanction procedures in the event of an infringement.

Occupational accident: an unexpected and unplanned occurrence, including acts of violence, arising out of or in connection with work, which results in one or more workers incurring a personal injury, disease or death. Travel, transport or road traffic accidents in which workers are injured and which arise out of or in the course of work (that is, while engaged in an economic activity, or at work, or carrying on the business of the employer) are considered occupational accidents. Commuting accidents, however, are not.

Occupational disease: a disease contracted as a result of exposure over a period of time to risk factors arising from work activity.

Occupational injury: any personal injury, disease or death resulting from an occupational accident. An occupational injury is therefore distinct from an occupational disease, which is a disease contracted as a result of exposure over a long period of time to risk factors arising from work activity. A case of occupational injury is the case of one worker incurring one occupational injury as a result of an occupational accident (one worker may incur several occupational injuries). An occupational injury could be fatal (where death occurred within one year of the day of the occupational accident) or non-fatal with lost work time. Statistics on fatal and non-fatal occupational injuries should always be presented, treated and interpreted separately, since they tend to come from different sources, often having different coverage and following different methodologies.

Permanent incapacity for work: cases of occupational injury where the persons injured were unable to work from the day of the accident, and were never able to perform again the normal duties of work in the job or post occupied at the time of the occupational accident causing the injury.

Temporary incapacity for work: cases of occupational injury where the workers injured were unable to work from the day after the day of the accident, but were later able to perform again the normal duties of work in the job or post occupied at the time of the occupational accident causing the injury (within a period of one year from the day of the accident).

Violence and harassment in the world of work: refers to a range of unacceptable behaviours and practices, or threats thereof, whether a single occurrence or repeated, that aim at, result in, or are likely to

result in physical, psychological, sexual or economic harm, and includes gender-based violence and harassment.

Workers in the reference group: Workers in the particular group under consideration and who are covered by the source of the statistics of occupational accidents, injuries or diseases (for example, those of a specific sex or in a specific economic activity, occupation, region, age group, or any combination of these, or those covered by a particular insurance scheme, accident notification system, or household or establishment survey). Workers in the reference group are the potential coverage of occupational safety and health statistics, so they will serve as the denominator of key indicators on occupational accidents and injury rates.

3.5. Main occupational safety and health indicators

It is generally difficult and not particularly informative to analyse the number of occupational accidents, injuries or diseases in absolute terms since they do not convey any information beyond the numerical magnitude of the phenomenon. And in fact, even the numerical magnitude is hard to grasp unless it is put in context. Based solely on the total number of occupational accidents, injuries or diseases, it is hard to tell how frequent these occurrences are, the extent of the workers' exposure to risk and the likelihood of incidents recurring in the future. With a view to drawing more helpful conclusions from the statistics and in order to favour comparisons (over time, across countries and even across economic activities or occupations), it is recommended to put figures into perspective by calculating a rate or ratio.

The main rates of occupational injuries used in labour statistics are incidence rates (number of occupational injuries during the reference period for a given number of workers in the reference group), frequency rates (number of occupational injuries during the reference period for a given number of hours worked by the workers in the reference group), and severity rates (number of days lost due to new cases of occupational injury during the reference period for a given number of hours worked by the workers in the reference group).

These rates are expressed per a given number of workers in the reference group (incidence) or per a given number of hours worked by workers in the reference group (frequency and severity). This given number could be 100, 1'000, 100'000, 1'000'000, etc. Keeping in mind the magnitude of the number of occupational injuries or days lost, the unit chosen should be the one which favours most the interpretation of the rates, by minimizing the decimals needed for the resulting rates to be meaningful.

Although the rates of occupational injuries could be expressed per a different number of workers or hours based on context and convenience, for the purpose of data comparability, the formulae most widely accepted and used are the following:

Incidence rate of occupational injuries

$$= \frac{\text{Number of new cases of occupational injury}}{\text{Number of workers in the reference group}} \times 100'000$$

Frequency rate of occupational injuries

$$= \frac{\text{Number of new cases of occupational injury}}{\text{Hours worked by the workers in the reference group}} \times 1'000'000$$

Severity rate of occupational injuries

$$= \frac{\text{Number of days lost due to new cases of occupational injury}}{\text{Hours worked by the workers in the reference group}} \times 1'000'000$$

All these rates should be calculated separately for fatal occupational injuries and non-fatal occupational injuries.

The incidence rates of fatal and non-fatal occupational injuries cast light on the extent to which workers in the reference group are exposed to work-related risks, by presenting the average number of fatal or non-fatal occupational injuries per worker in the reference group (or per given number of workers in the reference group). This refers to the personal likelihood of the workers in the reference group suffering from work-related injuries.

Similarly, the frequency rates of fatal and non-fatal occupational injuries provide information on the likelihood that workers in the reference group will incur occupational injuries given the amount of hours they worked. In other words, they present the average number of fatal or non-fatal occupational injuries per hour worked by workers in the reference group (or per given number of hours worked by workers in the reference group).

The severity rates of fatal and non-fatal occupational injuries give an idea of the relative cost or impact in terms of work days lost due to occupational accidents.

Rates can also be calculated to better assess the scope and activities of the labour inspection. For instance, the labour inspection rate presents the average number of labour inspectors per a given number of employed persons, conveying the extent to which the labour inspection staff has the means to ensure enforcement of safety and health regulations.

Just as for the rates of occupational injuries, the labour inspection rate could also be expressed per different numbers of employed persons. However, taking into account the magnitude of the ratio of inspectors to the employed around the world, for the purposes of international comparability, the recommended calculation is the following:

$$\text{Labour inspection rate} = \frac{\text{Number of labour inspectors}}{\text{Employment}} \times 100'000$$

Social protection systems are also important for occupational safety and health. In particular, it is crucial to have information on the share of workers who would be covered in the event of an occupational accident or injury.

$$\text{Share of workers covered in the event of occupational injury} = \frac{\text{Workers protected by injury insurance}}{\text{Employment}} \times 100'000$$

4. Sources of statistics on occupational safety and health

Labour statistics comprise statistics from a wide range of labour-related topics and can be derived from a variety of sources. The characteristics of the statistical source determine how reliable, comparable and representative labour statistics are. Hence, when referring to labour statistics, it is crucial to understand the implications of the type of source used and to keep in mind the methodology and coverage (geographical, population, topics, etc.) of the underlying source.⁶ This is critical for occupational safety and health statistics, which can come from a variety of sources.

⁶ From the [Quick Guide on Sources and Uses of Labour Statistics](#).


The more traditional sources of labour statistics are population and establishment censuses, and household and establishment surveys, because these are purposely designed to produce statistics. However, a wealth of valuable information can also be derived from sources not initially created for statistical purposes, such as administrative records and big data.⁷

In the case of occupational safety and health statistics, administrative records kept by a variety of agencies such as the labour ministry, the labour inspectorate, the social insurance or the health ministry are perhaps the most common sources. However, it is also possible to have occupational safety and health statistics from household surveys or establishment censuses or surveys. These data collection activities are designed specifically for the purpose of producing statistics (typically by the national statistical office or other relevant competent authorities).

No source of statistics can fulfil all statistical needs, implying that the different types of sources are complements rather than substitutes. Indeed, each type of data source has its advantages and disadvantages, and combining data sources allows leveraging their strengths. Nevertheless, in the field of occupational safety and health statistics, the lack of data availability remains the biggest challenge, and often times there is no more than one reliable data source accessible.

⁷ From the [Quick Guide on Sources and Uses of Labour Statistics](#).

► **Figure 2. Key advantages and disadvantages of the main sources of occupational safety and health statistics**



Advantages	Disadvantages
Administrative records	
<ul style="list-style-type: none"> - Data readily available, no additional compilation efforts or costs, cost-effective - Usually exhaustive coverage of the universe - Total count allows for great level of detail 	<ul style="list-style-type: none"> - Follow administrative purposes and guidelines, not statistical ones. Items of data collection determined by administrative needs, not statistical ones - Although coverage of the universe may be exhaustive, universe is often limited and far from comprehensive - Often not updated regularly - Under-reporting can be common - Official reporting requirements frequently exclude some categories of workers
Establishment censuses and surveys	
<ul style="list-style-type: none"> - Comprehensive coverage of large businesses - High data accuracy from payroll records - In-depth information on the employer or economic unit as well as on the employees 	<ul style="list-style-type: none"> - Often poor coverage of small businesses and the informal sector - High non-response rates (if it is not mandatory) - Data items limited by information in establishment registers and provided by the employer - Sampling errors in surveys - Generally no information on workers who are not employees (such as own-account workers and contributing family workers), workers who are not registered or with informal jobs
Household surveys	
<ul style="list-style-type: none"> - Comprehensive coverage of working-age population (employed, unemployed and outside the labour force) allows for studies beyond employment, and within employment, across different categories of employed - Questionnaire design allows the collection of data items of interest and detailed questioning gives more precise measurement - Large potential for interesting cross-tabulations given the amount of variables collected 	<ul style="list-style-type: none"> - Data quality depends on the accuracy of the respondents. This is especially crucial for occupational safety and health questions, where subjectivity may lead different respondents to recall or classify events differently - Characteristics of sampling may prevent reliable estimates for small groups and areas - Sampling errors - Lower quality of data on sensitive topics

4.1. Administrative records, including insurance records, notification records, and labour inspection records

Administrative records comprise lists of units of a given population (persons, items or events), which include information on each unit (variables associated with each unit, geographical localisation of each unit, and relationship between units), and where each unit can be uniquely identified and the information is regularly updated. These records are created and maintained by a specific agency for administrative purposes, notably having a record of all the elements managed by the agency, so they aim to be a complete list of all objects in the reference group or population (although it is possible in practice to have missing values). In general, as administrative records are intended to allow the relevant agency to keep track of all elements of a specified type (for instance, have an account of all the staff, the resources, the activities carried out, or the members), all elements are identifiable and the recording is comprehensive. However, as these records are created for administrative purposes and not statistical ones (the production of statistics is a positive secondary effect), the reliability and validity of the statistics will be determined by the administrative processes. The quality of the data, the type of data available, its coverage and timeliness will depend on the characteristics of the record and the registration procedures.⁸

Administrative records are the most common source of occupational safety and health statistics. In fact, perhaps the strongest point of administrative records is how ubiquitous they are. Lack of data availability is a major challenge in the field of occupational safety and health statistics. In the absence of statistical data collections such as establishment or household surveys, administrative records created by various agencies for their own purposes often represent the only available source of occupational safety and health data.

There is a wide variety of possible administrative records which could yield statistics on occupational safety and health, including records maintained by labour ministries, labour inspectorates, health ministries, social insurances, private insurances, and trade unions. Different types of records would pursue different goals and follow different guidelines, and thus, the statistics derived would have different methodologies and coverages. For instance, records of the corresponding system of notification of occupational accidents by the employers, the workers or a labour inspector to the competent authority (sometimes required by law) and records of compensation claimed (and received) by the workers incurring in an occupational injury to the competent authority (social insurance, labour ministry, etc.) could yield different statistics on occupational injuries. Indeed, often times not all notified injuries are compensated and/or not all compensated injuries are notified.

Therefore, for occupational safety and health statistics, the reliability of the data is greatly influenced by whether or not the registration or notification of occupational accidents, injuries and/or diseases with the agency keeping the record is obligatory. Where notification of accidents is not compulsory or there are reasons to believe these occurrences are largely under-reported, the record may be incomplete, and thus any statistics derived from it would underestimate occupational risks and hazards. Similarly, where statistics are derived from insurance records, it is important to know the coverage of the compensation scheme to assess how comprehensive the statistics are. Again, if the insurance in question is far from covering a large share of the employed, the statistics derived from its records would be limited in scope and they should never be interpreted as if they were representative of the country as a whole.

More generally, the coverage of administrative records may not be fully comprehensive, due to under-reporting (under-notification of occupational accidents), some workers not having access to compensation schemes (for instance, workers in informal employment may be excluded), or the record covering only some country regions or economic activities. In these cases, it is crucial to have accurate information on the coverage of the statistics, to ensure their accurate interpretation.

⁸ From the [Quick Guide on Sources and Uses of Collective Bargaining Statistics](#).

Moreover, since the data collection follows the administrative purposes of the agency keeping the record, the statistics collected on occupational accidents, injuries or diseases may not refer to the definitions presented in section 3.4, but rather to the definitions established by the agency in question. For example, as mentioned above, statistics on occupational injuries from an insurance record may refer only to injuries effectively compensated by that agency, and statistics from labour inspection records may refer only to occupational injuries which were notified to the labour inspectorate or which came to the labour inspectors' knowledge.

Likewise, time periods and time thresholds used as operational criteria are crucial in occupational safety and health statistics. Ideally, a comprehensive count of occupational injuries would cover all injuries, regardless of the duration of the incapacity for work that they caused. However, for operational purposes, often times records only log injuries having resulted in an absence from work of more than a given number of days. In such cases, it is important to assess how many injuries are left out, and keep them in mind for cost estimations of occupational accidents. For instance, if occupational injuries are only recorded and analysed if they result in an absence from work of at least three days, and most injuries in the country lead to a shorter absence from work (therefore never making the record), authorities will greatly underestimate the aggregate number of work days lost, the impact of accidents on production, the risks workers are exposed to and the safety concerns which should be addressed.

It is worth noting that administrative records kept by different agencies often cover different aspects of occupational safety and health. The agencies compiling information on occupational diseases are usually different from the ones focussing on occupational accidents or injuries. The agencies notified about occupational injuries are not the same ones as those compensating them. The agencies notified about or compensating fatal occupational injuries tend to be different from the agencies notified about or compensating non-fatal occupational injuries. Thus, when deriving statistics from administrative records, information on occupational diseases, fatal occupational injuries and non-fatal occupational injuries is very likely to be derived from different sources. This means that the sources may have different coverage, so that statistics on diseases, fatal injuries and non-fatal injuries, although very complementary, may not be strictly comparable.

A good example of statistical production from administrative records on occupational safety and health matters is given by the Argentinian Work Risks Authority (*Superintendencia de Riesgos de Trabajo*). Based on the occupational accidents, commuting accidents, and occupational diseases notified by the different insurance schemes or employers, this agency consolidates valuable statistics on occupational safety and health with a view to monitoring risks and preventing future accidents. These statistics are regularly disseminated on the agency's website.⁹ The Costa Rican National Insurance Institute also compiles and disseminates valuable statistics on occupational accidents and their consequences.¹⁰ Similarly, Safe Work Australia, the Australian authority in charge of developing national policy regarding occupational safety and health, produces and disseminates statistics from various sources of administrative data.¹¹

The Irish Health and Safety Authority collects data on occupational accidents and injuries with a view to monitoring health and safety performance and identifying major risks. The data are provided by employers and self-employed workers. Employers are legally required to report incidents to the Health and Safety Authority when injuries cause an absence from work of four or more days.¹²

⁹ Available at: https://www.srt.gob.ar/estadisticas/acc_ultimos_datos.php.

¹⁰ Available at: <https://www.sugese.fi.cr/seccion-estadistica>. Summary statistics are also included in the Labour Ministry's Statistical Yearbook (2019 edition available at: http://www.mtss.go.cr/elministerio/despacho/estadisticas/documentos-estadisticas/anuario_estadistico_mtss_2019.pdf).

¹¹ Available at: <https://www.safeworkaustralia.gov.au/statistics-and-research/statistics/statistics>.

¹² More information on this data collection is available at: <https://www.hiqa.ie/areas-we-work/health-information/data-collections/work-related-injuries-database>.

Usually the information contained in administrative records is compiled via notification or claim forms filled in and submitted by workers and employers, or via the log of duties performed by labour inspectors. Thus, the variables and indicators available depend on the contents of these forms and templates, and the quality of the data depends on the accuracy of the people submitting them. Workplace Denmark, the Danish authority monitoring occupational safety and health amongst foreign service providers and for employees posted to work in Denmark, provides an example of notification form that employers must fill in when an employee is injured in an accident at work, to report the accident to the relevant authorities.¹³

4.2. Establishment censuses and surveys

Establishment censuses and surveys are statistical data collections where the sampling unit is the establishment. Thus, they can provide data on topics on which the establishment or employer holds information, such as wages, working time, employees and vacancies. An establishment census is an exhaustive exercise covering all establishments in a country, whereas an establishment survey focuses only on a representative sample of establishments. Naturally, establishment censuses are more costly and are typically conducted less frequently than establishment surveys, but they are more representative.

Establishment censuses and surveys can serve as sources of occupational safety and health data, although they are used to produce such data much less frequently than administrative records.

The statistics coming from establishment censuses and surveys tend to be highly accurate, as they are based on information taken directly from establishment payrolls. In addition, the establishment will be able to provide detailed information on its own characteristics (establishment size, economic activity, production, etc.). What is more, establishment censuses and surveys provide reliable data on all workers covered within their scope (not just workers having been in a work accident), meaning that they have the potential to provide reliable statistics of the incidence, frequency and severity of occupational accidents. In other words, establishment censuses and surveys can provide statistics for both the numerator and the denominator of the incidence, frequency and severity rates of occupational injuries (as described in section 3.5), making their calculation consistent and reliable. Establishment surveys are especially useful for the study of occupational safety in particularly hazardous economic activities or regions, since those activities or regions can be identified and prioritized from the sampling frame.

However, the availability of occupational safety and health information from establishment censuses and surveys depends on the questionnaire design, and more specifically on the number and quality of questions asked on occupational safety and health matters.

Furthermore, establishment surveys are usually limited in their coverage: it is not uncommon for them to cover only establishments above a certain size and/or in certain economic activities such as non-agricultural private enterprises. Rarely do they cover informal sector enterprises. Also, data from establishment surveys typically refer only to employees (who are the type of workers employed in establishments), excluding the self-employed (own-account workers, contributing family workers, etc.). Thus, data from establishment surveys may exclude a large share of the employed population. It follows that the validity of establishment survey data for a given country is linked to the share of informal employment, the share of employed in small businesses and the share of self-employment.

In many countries, the scope of the establishment survey will be determined by the coverage and completeness of the business register used as the sample frame. Ideally, the sample frame should cover all major areas of the country, all economic activities and all establishment sizes.

Also, although the information taken directly from payroll records will have the utmost accuracy, the accuracy of the information provided on occupational accidents, injuries and diseases and safety matters

¹³ Available at: <https://workplacedenmark.dk/health-and-safety/report-a-work-accident/> for download.

will depend on the respondents' truthfulness, the way they perceive the survey and what they think the information compiled will be used for.

In Japan, the Ministry of Health, Labour and Welfare conducts an establishment survey every year since 1952 on industrial accidents, with an aim to get information on such occurrences. The sample of this survey covers around 32'000 establishments from the private and public sectors.¹⁴

The United States also has an annual establishment survey used to estimate incidence rates and counts of occupational accidents, injuries and diseases: the Survey of Occupational Injuries and Illnesses. This survey covers the whole country, and the private sector as well as state and local governments. It provides detailed data on each case of occupational accident, injury or disease, on the workers involved, and on work days lost.¹⁵

In Philippines, the Integrated Survey on Labour and Employment is used to collect data on occupational safety and health practices and occupational injuries and diseases. Box 1 presents the questions on occupational safety and health included in the survey questionnaire to compile such data from respondents.

¹⁴ Summary information on this survey is available at: https://www.mhlw.go.jp/english/database/db-/dl/outline_of_survey_2009.pdf. Data from this survey included in the Yearbook of Labour Statistics 2017 are available at: <https://www.mhlw.go.jp/english/database/db-yl/2017/05.html>.

¹⁵ More information on the Survey of Occupational Injuries and Illnesses is available at: <https://www.bls.gov/opub/hom/soii/home.htm>.

► **Box 1. Examples of questions on occupational safety and health in establishment surveys**

Philippines – Integrated Survey on Labour and Employment 2017/2018

Occupational Safety and Health Practices – Reference period: calendar year 2017

- What activities were conducted or practiced in your establishment as part of prevention or control measures or activities against work safety and health hazards? *(Mark "Yes" or "No" for each)*
 - Organized safety and health committee
 - Appointed safety/health officers and/or first-aiders
 - Posting of safety signages or warnings
 - Workers' orientation on safety and health hazards at work
 - Installation of machine guards on moving parts/equipment
 - Emergency preparedness and response activities for earthquake, fire, chemical spills, etc.
 - Regular monitoring and control of hazards such as chemicals, noise and heat in work areas
 - Dissemination of information materials on safety and health
 - Submission of required reports on illnesses/injuries to DOLE
 - Trainings on safety and health for officers and workers
 - HIV and AIDS education in the workplace
 - Regular inspection and maintenance of equipment
 - Advocacy, education and training on drug-free workplace
 - Provision of work accommodation measures to support workers with tuberculosis (e.g., flexible leave/work schedule)
 - Smoke-free workplace
 - Periodic/annual medical exam of workers
 - Hepatitis B education in the workplace
 - Practice proper handling of chemicals/hazardous materials (appropriate labels, handling, storage)
 - Use of safety manuals, labels or maintenance procedures
 - Use of safety data sheet for chemicals
 - Perform corrective action programs and audits
 - Proper maintenance of mechanical and electrical facilities
 - Provision of appropriate personal protective equipment (PPE) such as respirators, hardhat, safety shoes, safety goggles, gloves, etc.
 - Adoption of DOTS (Directly Observed Treatment Short Course) in management or referral of workers with tuberculosis
 - Random drug testing of officers and employees
 - Assessment of ventilation system
 - Others (specify) _____

- Which of the following occupational safety and health policies and programs were implemented in your establishment? *(Mark "Yes" or "No" for each)*
 - Hearing Conservation Program
 - Monitoring/Surveillance of Occupational and Work-Related Injuries and Illnesses
 - Healthy Lifestyle Program such as smoking cessation, regular physical exercise, good nutrition and stress management
 - DOLE-Approved Construction Safety and Health Program
 - Policy on non-discrimination of workers who have/had Pulmonary Tuberculosis (PTB)
 - Policy on non-discrimination of workers confirmed/suspected/perceived to have HIV infection
 - Policy on non-discrimination of workers confirmed/suspected/perceived to have Hepatitis B infection
 - Accident Prevention Program
 - Emergency Preparedness and Response Program
 - Tuberculosis Prevention and Control Program
 - Heat Stress Management Program
 - Respiratory Protection Program
 - Anti-Sexual Harassment Program
 - HIV and AIDS Prevention and Control Policy and Program

► **Box 1. Examples of questions on occupational safety and health in establishment surveys (continued)**

- Indoor Air Quality Program
- Drug-Free Workplace Policy and Program
- Employee Assistance Program related to substance abuse to include treatment, rehabilitation and referral services
- Hepatitis B Prevention and Control Policy and Program
- Ergonomics Program
- Anti-Sexual Harassment Policy
- Chemical Safety Program such as provision of Globally Harmonized System (GHS) labels and safety data sheet
- Fire Prevention and Control Program
- Others (specify) _____
- Did your employees availed work safety and health-related trainings/seminars? *(If yes, please check the actual trainings/seminars availed by your employees and indicate at most 3 training agencies/organizations which conducted it using the corresponding code)*
 - 40-Hour Basic Occupational Safety and Health Training
 - 40-Hour Construction Safety and Health Training
 - 1-Day Occupational Safety and Health Orientation
 - HIV and AIDS Prevention and Control in the Workplace
 - Safe Work Procedures/Lock Out Tag Out Training
 - Drug-Free Workplace Training
 - Tuberculosis Prevention and Control in the Workplace
 - Smoke-Free Workplace/Tobacco Control in the Workplace
 - Hepatitis B Prevention and Control in the Workplace
 - Stress Management
 - Prevention and Control of Lifestyle-Related Disease/Healthy Lifestyle
 - Fire Safety Training
 - Industrial Hygiene (ventilation, work environment measurement, etc.)
 - Chemical Safety Training
 - Ergonomics Training
 - Emergency Preparedness and Response
 - Safety Audit/Accident Investigation
 - OSH Management System
 - Family Planning and Reproductive Health
 - Scaffold Safety Training
 - Others (specify) _____
- Who is/are the designated health and safety personnel in your establishment?
 Trained First-Aider Occupational Health Nurse Occupational Health Physician Dentist
Industrial Hygienist Safety Officer
Is your safety *officer* accredited by the DOLE? Yes No
 Other (specify) _____ None

Occupational Injuries and Diseases – Reference period: calendar year 2017

- Did your establishment record occurrences (if any) of occupational injuries and diseases?
 Yes No (If yes, where do you record such occurrences?) EC Logbook Other _____
- Did your establishment experience any occupational accidents during the year? Yes No
- How many occupational accidents were there?

► **Box 1. Examples of questions on occupational safety and health in establishment surveys (continued)**

Type of Injury	Fatal cases	Permanent incapacity		Temporary incapacity		Cases without workdays lost
		Cases	Workdays lost	Cases	Workdays lost	
Total (sum)						
Superficial injuries and open wounds						
Fractures						
Dislocations, sprains and strains						
Traumatic amputations						
Concussions and internal injuries						
Burns, corrosions, scalds and frostbites						
Acute poisonings and infections						
Foreign body in the eye						
Others (specify)						

Part of the Body Injured	Fatal cases	Permanent incapacity cases	Temporary incapacity cases	Cases without workdays lost
Total (sum)				
Head				
Neck				
Back				
Trunk or internal organs				
Arm and shoulder				
Wrist and hand				
Lower extremities				
Whole body or multiple sites equally injured				

Cause of Injury	Fatal cases	Permanent incapacity cases	Temporary incapacity cases	Cases without workdays lost
Total (sum)				
Falls of persons				
Struck by falling objects				
Stepping on or struck by objects, excluding falling objects				
Caught by or in between objects				
Over-exertion or strenuous movements				
Exposure to or contact with extreme temperatures				
Exposure to or contact with electric current				
Exposure to or contact with harmful substances				
Exposure to radiation				
Others (specify) _____				

► **Box 1. Examples of questions on occupational safety and health in establishment surveys (continued)**

Agent of Injury	Fatal cases	Permanent incapacity cases	Temporary incapacity cases	Cases without workdays lost
Total (sum)				
Buildings, structures				
Prime movers				
Distribution systems				
Hand tools				
Machines, equipment				
Conveying/Transport/Packaging equipment or vehicles				
Materials, objects				
Chemical substances				
Human, animals, plants, etc.				
Others (specify) _____				

Major Occupation Group	Fatal cases	Permanent incapacity cases	Temporary incapacity cases	Cases without workdays lost
Total (sum)				
Managers				
Professionals				
Technicians and associate professionals				
Clerical support workers				
Service and sales workers				
Skilled agricultural, forestry and fishery workers				
Craft and related trades workers				
Plant and machine operators and assemblers				
Elementary occupations				

4.3. Household surveys

Household surveys are data collections using the household as the sampling unit. They are designed specifically for the purposes of collecting information on certain topics, and the data is compiled via questionnaires given to a sample of households in a population. By their nature, household surveys can cover any topic on which household members provide information. Where they are conducted frequently, they allow for the study of short-term trends.

Labour force surveys are the main type of household surveys used to derive labour statistics, since they are designed specifically for that purpose, and thus the survey questionnaires allow to properly investigate the desired labour-related topics with enough probing questions to ensure the accuracy of the results.

Labour force surveys and other relevant types of household surveys can serve as sources of data on some occupational safety and health aspects, notably occupational injuries, when the survey questionnaire

includes the corresponding questions. In fact, where there are no reliable sources of data on occupational injuries available and a household survey is planned, adding relevant questions to the survey questionnaire would be a cost-effective way of overcoming the lack of data.

The great advantage of using labour force surveys (or other types of household surveys) to produce occupational safety and health data is that they cover the whole working-age population within the survey sample (including all persons employed regardless of their economic activity, occupation or status in employment, all those unemployed and persons outside the labour force). Therefore, they provide a coherent framework for labour market analysis using various labour market indicators, including those on occupational safety and health. This also means that household surveys cover workers in the informal sector and/or in informal employment, given that individuals within the sample are interviewed irrespective of the characteristics of their employment (as opposed to establishment surveys, which tend to exclude informal sector enterprises and informal employment, as discussed in section 4.3). Hence, household surveys can provide data on occupational safety and health concerns of hard-to-reach groups such as agricultural workers, the self-employed and workers in informal employment.

Just as establishment surveys, household surveys also allow for the consistent and coherent measurement of incidence, frequency and severity rates of occupational injuries, since they provide reliable statistics for the numerator and denominator of those rates following the same methodology.

However, it is important to note that the coverage of statistics on occupational injuries from household surveys is determined by the location of the corresponding questions in the survey questionnaire. If these questions are asked to all persons employed, then it would be possible to have occupational injuries statistics for all workers. If, on the contrary, these questions are asked for instance only to employees, then the reference group can only be persons in paid employment.

Another major advantage of household surveys as a source of occupational injuries statistics is that data can be cross-tabulated with numerous variables of interest, as these surveys also compile information on many items related to the individuals' labour market and socio-economic situation. Nonetheless, the possibilities for detailed disaggregation will depend on the sample size and design. Indeed, there is a need to strike the right balance between data reliability (linked to sampling) and data disaggregation.

Moreover, given that the unit of analysis in a household survey is the individual, each person would only be counted once, avoiding issues of double-counting sometimes encountered in administrative records.

Labour force surveys also favour international comparability of occupational injuries statistics, since these surveys' methodologies are more consistent from country to country than those of administrative records or establishment surveys, and usually apply international standards and operational criteria recommended at the international level.

Nevertheless, the reliability of the occupational injuries data derived from household surveys depends heavily on the accuracy of the respondents, their recollection of accidents and injuries, and their subjectivity in defining these occurrences. Even though the survey enumerator may remind respondents of the definition of occupational accidents and injuries used, their own perception of the occurrences still plays an important role. In this sense, administrative records, especially insurance records, may have a more consistent identification of occupational accidents and injuries, since the insurance scheme must apply a strict and coherent definition to decide on the compensation of accidents and injuries.

Also, in household surveys, one member of the sampled household will often provide the required information on all the members of the household, and it is possible that the respondent would not know with precision the occupational safety and health information of the other persons in the household.

The main disadvantage of household surveys as a source of occupational safety and health statistics is that, due to the relatively low frequency of occupational injuries, the sampling size would often not enable the production of reliable estimates. Furthermore, household surveys entail sampling errors, the extent of which depends on the sample design. In particular, estimates for small groups or areas might have limited reliability due to their low coverage in the sample, particularly for *rare* occurrences such as occupational injuries.

As the information is collected directly from individuals (household members), household surveys can only yield information on aspects of occupational safety and health known to the workers interviewed. The most common items collected are the number of non-fatal occupational injuries suffered and the work days lost due to them. Since a worker may incur several occupational injuries, the questionnaire should ideally inquire on the number of injuries incurred per worker, with a view to producing both data on the number of workers having incurred injuries, and the total number of injuries. It is more difficult to compile data on fatal occupational injuries from household surveys, although relevant questions can be asked to proxy respondents for that purpose.

It is necessary to note the critical importance of the formulation of questions on occupational safety and health. The wording of the questions will determine to a great extent the accuracy of the results. When interpreting the resulting statistics, it is essential to bear in mind the question or questions used to compile the data, as they determine what the data actually refer to. The question design also influences data comparability across countries, as not all questions would obtain exactly the same type of information.

Box 2 presents some examples of questions used to compile information on occupational safety and health in labour force surveys in various countries.

► **Box 2. Examples of questions on occupational safety and health in labour force surveys**

Bangladesh – Labour Force Survey 2017

- In the last 12 months have you been hurt in any accident while working that caused you injury or illness? *(Include accidents that took place while commuting to/from work).*
 Yes No
- Did any of the injuries result in your being absent from work /school, or unable to work/ attend school, for at least one day, apart from the day of the accident?
 Yes No
- Did the injuries seriously restrict your work or activities even though you were not absent from work or unable to work?
 Yes No
- How many of these injuries did you have in the last 12 months? _____
- In the last 12 months how many days were you absent from work due to injuries sustained from accidents? *(If no days away from work write 00, If it is impossible to return to work due to accident then write 99).*
- During the last 12 months have you been exposed to any of the following hazards at work? *Check all that apply:*
 - Dust, fumes, loud noise or vibration
 - Fire, gas, flames
 - Extreme cold or heat
 - Dangerous tools knives, blades, etc.
 - Working too much below or above the surface of the earth
 - Work in water / pond / river
 - Workplace too dark or confined / Insufficient ventilation
 - Chemicals (pesticides, glues, etc.)
 - Explosives
 - Others (specify) _____
- During the last 12 months, have you been subjected to the following at work? *Check all that apply:*
 - Constantly shouted at/repeatedly insulted
 - Beaten /physically hurt
 - Sexually abused (touched)
 - Others (specify) _____

Liberia – Labour Force Survey 2017

- Have you ever been hurt in an accident while working that caused you personal injury or illness? Yes No
- Have you had any such accidents in the last 12 months? *(Do not count commuting accidents occurring between home and place of work/training).* Yes No
- In which of your jobs were you working at the time of the accident? *(if more than one accident, consider only the most serious one).*
 Current main job Current second job Usual main job Usual second job Other (specify)
- Did this injury result in you being absent or unable to work, for at least one day, apart from the day of the accident? Yes No
- How many calendar days were you (or are you likely to be) away from work because of the injury? _____

Malawi – Labour Force Survey 2012

- Have you ever been involved in any accident while working that caused personal injury or illness? *(Do not count commuting accidents occurring between home and place of work/training).* Yes No
- Did you receive any compensation?
 Yes No
- Have you had any such accidents in the last 12 months? Yes No
- In which of your jobs were you working at the time of the accident? *(if more than one accident, consider only the most serious one).*
 Current main job Current second job Other (specify)
- How many calendar days were you or are you likely to be away from work because of the injury? _____

► **Box 2. Examples of questions on occupational safety and health in labour force surveys (continued)**

Pakistan – Labour Force Survey 2017/2018

- In the past 12 months, did..... receive any occupational injury/disease that caused to take time off work and/or consulted a doctor?
 - Only one More than one (Specify how many) None

In case of more than one injury/disease all following questions should be repeated for each separate occupational injury/disease.
- What was the unsafe act that caused the accident/disease?
 - Operating without authority
 - Excess speed
 - Horse play
 - Failure of safety devices
 - Using unsafe equipment or equipment unsafely
 - Taking unsafe position
 - Disobeying instruction
 - Failure to use the provided personal protective equipment
 - Unsafe loading or stacking
 - Wrong order of supervisor (Specify what and by whom)
 - Unsafe act by fellow employee (Specify what and by whom)
 - Unsafe act of outsiders (Specify what and by whom)
 - Other (Specify)
- Did...receive treatment for injury / disease or have to take any time off work because of it? *(Please include any time off work no matter how short it was).*
 - Hospitalized
 - Consulted a doctor, nurse or other medical professional
 - Took time off work
- None
- What were the unsafe conditions causing the accident/disease?
 - Unguarded or inadequately guarded
 - Defective tool, equipment or material
 - Unsafe design or construction
 - Poor illumination
 - Inadequate ventilation
 - Improper clothing and footwear
 - Non-provision of necessary protection equipment
 - Poor house keeping
 - Slippery surfaces
 - Other (Specify)
- How soon was ... able to go back to work/resume normal activities after the accident/disease?
 - Still not at work/have not resumed normal activities
 - Will never be able to go back to work/resume normal activities
 - On the same day as the accident/disease occurred
 - On the first day after the accident/disease
 - On the second day after the accident/disease
 - 3 to 7 days after the accident/disease
 - 8 to 15 days after the accident/disease
 - 16 to 22 days after the accident/disease
 - 23 days to 1 month after the accident/disease
 - 2 to 4 months after the accident/disease
 - 5 to 7 months after the accident/disease
 - 8 to 12 months after the accident/disease
 - Don't Know

Zambia – Quarterly Labour Force Survey 2018

- Has (NAME) fallen ill or been injured in the last 12 months? Yes No
- How often was (NAME) injured or ill in the last twelve months? Once or twice 3 to 5 times More than five times
- How serious was the most recent illness or injury (NAME) got?
 - Consequences on work: Permanently disabled Prevented from work permanently Stopped work temporarily Changed jobs
 - Consequences in schooling: Stopped school temporarily Prevented from schooling permanently Not very serious

► **Box 2. Examples of questions on occupational safety and health in labour force surveys (continued)**

- Thinking of the past 12 months has (NAME) suffered any occupational injury/ disease resulting from an accident at work or in the course of your work? Yes No
- Which of the following did (NAME) suffer? *Check all that apply:*
 - Superficial injuries or open wounds
 - Fractures
 - Dislocations, sprains or strains
 - Burns, corrosions, scalds or frostbite
 - Breathing problems
 - Eye problems
 - Skin problems
 - Stomach problems/diarrhoea
 - Fever
 - Extreme fatigue
 - Other (specify)
- Thinking about (NAME)'s most serious illness/injury, how did this/these affect (NAME)'s work/schooling? Not serious- did not stop schooling/ work Stopped work for a while Stopped work completely Stopped school for a short while Stopped school completely
- How many occupational injuries has (NAME) had in the last 12 months that have kept (NAME) away from normal job for more than one day not counting the day of the accident? Once or twice 3 to 5 times More than five times
- Where was (NAME) when the accident took place? In the usual work area in the establishment/unit Somewhere else in the establishment/unit In the usual work area away from the establishment/no fixed work area On work-related travel Other (Specify) Not known
- How soon was (NAME) able to resume work or normal duty after the accident? Still off paid work Was casual employee Self-employed Same day Less than three consecutive days after the accident More than three consecutive days after the accident
- Specify number of days it took (NAME) to resume normal duty after the accident: _____
- Does (NAME) carry heavy loads in her/his daily activities (work, school, etc)? Always/ often Sometimes Seldom/Rare Never
- Has (NAME) ever operated machinery/ equipment in any activity? Yes No Don't know
- What type of tools, equipment or machines does (NAME) use at work? _____
- Is (NAME) exposed to any of the following at work?
 - Dust, fumes
 - Fire, gas, flames, extreme temperatures, humidity
 - Loud noise levels or damaging vibrations
 - Snake bite/ insect stings (poisonous)
 - Dangerous tools (knives etc.)
 - Work underground
 - Work at dangerous heights
 - Work in water/ lake/ pond/ river
 - Workplace too dark or in confined spaces
 - Insufficient ventilation
 - Chemicals (pesticides, glues, etc.)
 - Explosives
 - Other things, processes or conditions bad for your health or safety
 - Not applicable
- Has (NAME) ever been subject to the following at work? *Check all that apply:*
 Constantly shouted at Repeatedly insulted Beaten/ physically hurt Sexually abused (touched or done things that you don't want) Other (Specify).

In some cases, instead of adding a section on occupational safety and health in the core labour force survey questionnaire (such as the ones presented in Box 2), an ad-hoc module on occupational safety and health is attached to a specific round of the labour force survey (but not to all rounds). This provides household survey data on occupational safety and health for a given period in time or with a certain regularity without over-burdening the survey questionnaire in all rounds. With this strategy, labour market topics for which it is crucial to have reliable data but not necessarily with a high frequency can be alternated for inclusion in the labour force survey. An example of this is provided by the Irish Quarterly National Household Survey, which included a module on accidents and illnesses in the first quarters of 2003, 2007 and 2011.¹⁶ The United Kingdom also has two annual modules added to its Labour Force Survey: the “Workplace Injury Module” and the “Self-reported Work-related Illness Survey Module”.¹⁷

To foster the accuracy of respondents in labour force or other types of household surveys, the use of several questions on occupational safety and health matters (as in the examples provided in Box 2) would serve as a quality check.

It is also rather common for the question on the reasons for absence from work typically included in labour force surveys (asked to employed persons absent from work during the survey reference period) to include occupational accidents, injuries or diseases as a possible answer. This remains true even in cases where no questions are asked specifically on the occurrence of accidents or injuries, allowing to still have some information on their impact on work days lost.

4.4. Combining different sources to pool their strengths

No data source can fulfil all data needs. Each type of source has its own methodology, coverage and characteristics. Each type of source also has its own advantages and disadvantages. Therefore, combining different types of sources is a good way to overcome their drawbacks by pooling their strong points.

More specifically, administrative data and sample surveys have different methodologies and characteristics, mostly stemming from the fact that their design follows different objectives. Their scope and coverage also tends to be different, in terms of the geographic areas, economic activities, establishments and types of workers covered. Thus, data from administrative records and survey data are often not strictly comparable. They are also not interchangeable, since they often inform on different items, but in the absence of one, the other is a valuable source of information. Ideally though, these two types of data sources would be combined to complement each other.

As previously stated, the coverage of administrative records with data on occupational safety and health may not be fully comprehensive, due to under-reporting of accidents, the exclusion of some workers from the compensation scheme, or the record covering only some country regions or economic activities. In such cases, administrative data can be supplemented by data derived from household surveys and/or establishment surveys, to obtain a more exhaustive coverage of all workers and economic activities.

Likewise, when selecting the sample for a survey, in the absence of a recent census, a suitable administrative record or register can serve as a sample frame. The variables in the record or register can be used to stratify the population for the sample.

¹⁶The list of modules included in the Irish Quarterly National Household Survey is available at: <https://www.cso.ie/en/qnhs/qnhsmethodology/>. The questions included in the 2011 Accidents and Illnesses module is available at: <https://www.cso.ie/en/qnhs/qnhsmethodology/qnhsaccidentsandillnessesq12011questionnaire/>.

¹⁷More information on these modules of the United Kingdom's Labour Force Survey is available at: <https://www.hse.gov.uk/statistics/lfs/technicalnote.htm>

Also, combining administrative data and survey data can provide a probe for accuracy of the occupational safety and health measures, and allow to correct for under-reporting or non-response.

It is also possible that several administrative records exist with different geographical coverage or covering different economic activities. Ideally, all records pertaining to the same topic kept by different agencies should be linked and/or consolidated (using unique unit identifiers, for example). This would facilitate the expansion of the coverage of the statistics, contributing to a more comprehensive and representative dataset by linking together records covering different regions of the country or economic activities.

4.5. Other sources

In the absence of a recent household or establishment survey, coupled with a lack of official procedures to produce reliable statistics from administrative records, other sources and methods can provide some insights into occupational safety and health issues. In particular, the information available, knowledge on the national context and some conscious assumptions can be used to derive estimated, imputed or modelled labour market data.

The methods used for estimation and imputation must be robust in order to ensure data quality and the reliability of the results, just as any model used to derive labour statistics should be thoroughly tested and reviewed.¹⁸

5. Challenges and considerations

5.1. Data availability

Perhaps the main challenge in the field of occupational safety and health statistics is the lack of data availability. Indeed, it is not very common for occupational safety and health matters to be included in establishment or household surveys, and although administrative records are ubiquitous, they are not always kept following strict guidelines and they are not always regularly updated. For administrative data to become statistical data, the maintenance of the record has to follow certain procedures to ensure the quality, validity and consistency of the information. And even in cases where reliable data are available from certain administrative records, the agencies with the competency to handle, analyse and use the data do not always have access to them.

In the quest to ensure the occupational safety and health of all workers, data transparency and the public availability of data are of utmost importance. Policy makers need to be able to access reliable data to develop and evaluate occupational safety and health policies and preventive strategies, but the public availability of data can inform other key agents as well. For instance, researchers and journalists may cast light on crucial occupational safety and health concerns by analysing and communicating on statistics. Also, awareness of occupational safety and health issues can foster the commitment of governments and social partners to actively participate in securing safe and healthy working environments. Social partners (including unions and employers' organizations) may become aware of the risks and hazards of their own workplaces thanks to available data, and promote action to ensure their own safety.

¹⁸ From the [Quick Guide on Sources and Uses of Labour Statistics](#).

5.2. Variety of possible sources

The variety of possible sources of data on occupational injuries (administrative records, establishment surveys and household surveys) hinders the comparability of data across countries. These source types follow different methodologies and even provide information on different specific concepts.

In fact, even data derived from administrative records are not strictly comparable, since various types of records follow different rules and are maintained by different agencies. As mentioned before, two main sources of occupational safety and health data are records of notifications by employers to the competent authority and insurance records of the authority compensating the victims. These two would clearly yield different results, since it is possible that not all injuries that were compensated to workers were reported by the employer and vice versa. It is also possible that these records have a different geographical coverage or that they cover different economic activities or groups of workers.

It is important to note that there may be a difference in units used from source to source: insurance records and notifications records will most likely give the number of cases of injuries (if one worker had suffered from several injuries throughout the year, he/she would appear as many times as the number of injuries suffered), whereas information derived from household surveys would refer to the number of persons having suffered from at least one injury (unless the survey reliably collects information on how many injuries each person suffered and the results are aggregated).

5.3. Data comparability across countries

In addition to the variety of possible sources, many other factors contribute to hindering the international comparability of occupational safety and health statistics. These factors include (but are not limited to) differences across countries in the legal framework governing occupational safety and health, social protection systems, health insurance systems, the composition of the labour market (in terms of the prevalence of informal employment and self-employment and the sectoral composition, for instance), and the labour inspection resources.

The study of occupational safety and health at the international level and comparisons across countries and regions of occupational accidents, injuries and diseases are crucial to the assessment of workers' undue exposure to occupational risks and hazards. Having a wider perspective allows for the better understanding of occupational safety and health concerns in the national context. Other countries' experiences can provide useful examples of effective policies, systems and strategies to prevent occupational accidents, injuries and diseases.

However, all factors hindering the international comparability of data must be taken into account when doing cross-country occupational safety and health studies.

5.4. Data comparability over time and trend analysis

The analysis of trends in occupational safety and health measures (such as occupational injury rates, for instance) provides information on the progress or deterioration in occupational safety and health, revealing the effectiveness of prevention measures and the eventual need for further regulation.

It must be noted, however, that indicators on occupational accidents and injuries are volatile, since unexpected but significant accidents or national calamities bring about strong annual fluctuations. Hence, short-term trend analyses of occupational safety and health measures are rather difficult. Instead, trend analyses should better focus on studying the underlying longer-term trend behind such sharp changes.

5.5. Importance of data disaggregation

Data on occupational safety and health are essential for planning preventive strategies because they signal areas of particular concern. With a view to designing more targeted prevention strategies and related policies, it is recommended to produce and analyse occupational safety and health indicators disaggregated by various items of interest. Disaggregation brings to light the groups of workers, economic activities or occupations with the highest risk of work-related accidents, injuries and diseases. They can then be targeted more effectively for inspection visits and the development of regulations and procedures, as well as for safety campaigns.

For example, having statistics on fatal and non-fatal occupational injuries by economic activity, by occupation and by region within the country can be very enlightening. It casts light on the particular areas that policy makers should focus on in terms of improving safety measures at the workplace, by providing specific information on economic activities, occupations or regions more prone to occupational accidents and diseases.

What is more, having information on the characteristics of the workers who were victims of occupational accidents can reveal which groups of workers are particularly exposed to undue risks at work. For instance, statistics on workers incurring occupational injuries by sex, age, migrant status, status in employment, and type of contract can be instrumental in protecting the most exposed workers from safety and health deficits.

Indeed, an ILOSTAT blog based on ILOSTAT occupational injuries statistics found that in almost all countries with data available, the number of occupational injuries per 100'000 workers was higher for men than for women, both for fatal and non-fatal injuries. One possible explanation for this gender dimension of risk exposure could be the concentration or over-representation of male workers in the most unsafe sectors. This points to the need for appropriate regulations and targeted measures to minimize risk exposure and ensure the safest working environment possible for all workers, taking into account the specificities of each sector of activity. Indeed, looking at the distribution of occupational injuries by sector of activity, it becomes clear that some sectors are far more hazardous than others for workers, at least in terms of the risk of being in a work accident. In general terms, the sectors that seem to concentrate more fatal work accidents are manufacturing, construction, and transportation and storage. In fact, in over two-thirds of countries with available data, each of these sectors is among the top three sectors in terms of the share of fatal occupational injuries. To a lesser (although still noteworthy) degree, work-related accidents also often arise from agricultural activities. In a little less than a quarter of all countries with data, agriculture appears among the top three sectors in terms of the share of fatal occupational injuries.¹⁹

However, another possible explanation for this gender dimension of occupational accidents is the traditional and inherent gender bias in reporting, monitoring and data collection procedures for occupational safety and health matters as well as in occupational safety and health research. In fact, since occupational research traditionally focuses on male-dominated industries, risks, hazards and accidents of these industries are better known and better addressed. For instance, efforts to ensure the safety of workers doing heavy lifting in construction are common, often leading to regulation, but very little is known (and done) about the risks and impact of heavy lifting in care work (whether paid or unpaid). Also, although statistics on occupational injuries reflect a higher likelihood for men to be in an occupational accident, there is an impairing lack of disaggregated data on occupational diseases and risk factors. This is a reason for concern since the focus of occupational safety and health research on male-dominated industries also implies a knowledge gap for risk factors particularly affecting women, or affecting women differently. Typically, for instance, the benchmarks for safe levels of radiation, chemicals and dusts in

¹⁹ Excerpt from the blog. Blog available at <https://ilostat.ilo.org/covid-19-and-the-new-meaning-of-safety-and-health-at-work/>.

relevant industries are established taking men as reference, when these levels could still be unsafe for women.²⁰

The Global Indicator Framework to monitor progress towards the Sustainable Development Goals states that indicator 8.8.1 on the rate of fatal and non-fatal occupational injuries per 100'000 workers must be disaggregated by sex and migrant status. Having information on nationals and migrants separately allows to assess differences in the extent to which these two population groups are exposed to work-related risks and thereby to determine the need for targeted campaigns or policies.

Indeed, the abovementioned ILOSTAT blog found that in 73 per cent of countries with data in ILOSTAT, the incidence rate of fatal occupational injuries was higher for migrant workers than for non-migrant workers (either EU or non-EU migrants in the case of EU countries). This suggests that migrant workers are more exposed to occupational risks and hazards, which may be linked to the characteristics of the types of jobs they occupy. In order to ensure that no one is left behind, targeted measures are needed to promote and extend occupational safety and health to all workers.

There are many challenges surrounding the compilation of occupational safety and health statistics for migrants, especially when they are not covered by relevant compensation schemes, when they are over-represented in informal employment or when they are not covered by the labour inspection. However, the compilation of such data is necessary to ensure the occupational safety and health of all workers. Thus, strong efforts are needed to foster the production of occupational safety and health statistics by migrant status.

5.6. Impact of the coverage of the statistics

When interpreting occupational safety and health statistics, it is crucial to keep in mind what the statistics refer to and what they cover. The statistics may be highly reliable, but only within their coverage and scope. Interpreting them as if they were representative of the country as a whole, of all workplaces and all workers when they are not, could be highly misleading.

In particular, it is important to know if the source of statistics (whether it is an administrative record, an establishment survey, or a household survey) excludes some areas of the country, some economic activities, some establishment sizes, some categories of status in employment and/or some groups of workers.

For example, the administrative records of an insurance company covering construction workers with formal jobs would be a valuable source of statistics on occupational injuries, but those statistics should be interpreted within their limited scope. They refer to compensated injuries of workers in the construction sector who have a formal job and are insured by that company. In order to have a better understanding of occupational injuries in the country, other sources of data (covering the remaining sectors of economic activity, workers in informal employment and workers registered with other –or no – insurance schemes) should complement this one.

Moreover, where there is reason to believe that under-reporting of occupational accidents, fatal and non-fatal occupational injuries and/or occupational diseases is common, figures should be interpreted with care, taking this into account.

²⁰ Criado Pérez, Caroline. 2019. Invisible Women – Exposing data bias in a world designed for men.

5.7. Analysis of occupational safety and health statistics within a given context and through a coherent set of indicators

From all the points raised above, it follows that it is imperative to take into account the context when interpreting occupational safety and health statistics. Indeed, the context (in terms of the legal framework, the social protection system, the health insurance system, the configuration and performance of the labour market, the economy, the state of social dialogue, and the role of the labour inspection) greatly determines key features and characteristics of occupational safety and health, and of occupational safety and health statistics.

In order to do a complete analysis of the state of occupational safety and health, it is necessary to interpret all the relevant indicators together, as a coherent set, and not to refer solely to one specific measure. For instance, it is important to know the number, prevalence and incidence of fatal and non-fatal occupational injuries as well as of occupational diseases, with information on the causes of the injuries and diseases and key characteristics of the workers and their workplaces. It is also crucial to have data on the consequences of occupational accidents, injuries and diseases, in terms of work days lost, income lost, production lost, burden of disease in mortality rates, etc.

To be understood within their context and to identify where the biggest challenges to occupational safety and health are, occupational safety and health indicators should be interpreted alongside other key labour market indicators, such as the unemployment rate, the composite measure of labour underutilization, the share of informal employment, the social protection coverage rate, the trade union density rate, the employers' organizations density rate, and the labour inspection rate. The study of occupational safety and health should be positioned within a broader labour market study, taking into account the characteristics of the employed population, its composition by sex, age, migrant status, status in employment, economic activity, occupation, etc., the prevalence of informality and unemployment, the emergence of non-standard forms of employment, and the share of casual workers, among others. The staff and resources of the labour inspection determine how well equipped the labour inspection is to monitor occupational safety and health issues, thus, relevant indicators are also crucial in the analysis of occupational safety and health statistics.

The corresponding national legal framework also plays a key role not only on the state of occupational safety and health, but also on the availability, quality and coverage of occupational safety and health statistics. A number of legal framework indicators can be added to the analysis to provide valuable context information, for instance on the obligation of employers to register employees, the obligation of employers to report accidents (where applicable), the mandate of the labour inspection, the articles governing the social protection and the public health systems, freedom of association and the right to unionization, etc.

The need to analyse labour market indicators as a coherent set rather than in an isolated manner is recognized in the creation of consistent indicator frameworks, such as the Decent Work Indicators and the Sustainable Development Goals Global Indicator Framework.

5.8. Need for coordination across agencies

The compilation, dissemination and use of occupational safety and health statistics involves many different agencies within a country. Thus, to realize the full potential of occupational safety and health statistics it is crucial to count on strong institutional cooperation. Typically, within a country, the national statistical office holds the statistical mandate and expertise (including designing and conducting sample surveys), while the labour inspectorate monitors occupational accidents and injuries, employers report accidents to the labour ministry and different areas of the social insurance (or private insurances) deal with compensating fatal and non-fatal occupational injuries. Information on occupational diseases is usually

compiled by the health ministry or other competent bodies. Therefore, it is imperative to have a coherent system of occupational safety and health statistics where all the agencies involved cooperate and collaborate, pooling together their sources of information and their expertise to inform effective policies on occupational safety and health matters.

6. Concluding remarks

Decent work is safe and healthy work. Occupational accidents, injuries and diseases have a significant human, social and economic cost. We must take action to prevent them, by ensuring that all workplaces are safe and healthy.

The central role of occupational safety and health in decent work and sustainable development was recognized in the 2030 Agenda for Sustainable Development, and particularly on Target 8.8, which refers to the protection of labour rights and the promotion of safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment.

Despite great efforts made in the last decades to promote safety and health at work in some parts of the world, work accidents and occupational diseases are still far too common.

The current pandemic is reminding us all of the importance of occupational safety and health, and the dangers of exposure to undue health risks.

Achieving the goal of universal occupational safety and health requires reliable data to monitor trends, identify occupational risks and inform the design of policies and strategies to prevent occupational accidents, injuries and diseases. Unfortunately, the field of occupational safety and health statistics faces several major challenges, including related to data availability, quality, timeliness, coverage and comparability. To overcome these challenges, it is essential to build a consolidated national system of occupational safety and health statistics, pulling together the expertise of all relevant agencies in the country.

The true value of occupational safety and health statistics lies in their analysis and use to inform policy formulation and safety measures. The transparency of the methodology used to derive occupational safety and health statistics is key in ensuring their correct interpretation. Information sharing, not only on the statistics per se but also on their methodology and coverage, leads to the sound use of occupational safety and health indicators.

We need not only reliable, timely, and consistent statistics on work accidents, injuries and diseases, but also to reach the full analytical potential of those statistics as well, to be able to ensure occupational safety and health for workers around the globe.

7. References

Criado Pérez, Caroline. 2019. Invisible Women – Exposing data bias in a world designed for men.

ILO. 1947. [Labour Inspection Convention](#), 1947 (No. 81).

ILO. 1981. [Occupational Safety and Health Convention](#), 1981 (No. 155).

ILO. 1985. [Labour Statistics Convention](#), 1985 (No. 160).

ILO. 1998. [Resolution concerning statistics of occupational injuries \(resulting from occupational accidents\)](#). Adopted by the Sixteenth International Conference of Labour Statisticians (1998).

ILO. 2002. [Protocol of 2002 to the Occupational Safety and Health Convention](#) (P155).

ILO. 2012. [Estimating the economic costs of occupational injuries and illnesses in developing countries: Essential information for decision-makers](#).

ILO. 2012. [Occupational injuries statistics from household surveys and establishment surveys](#).

ILO. 2013. [Decent Work Indicators, Concepts and Definitions](#). Second version, draft. Chapter 8 on Safe work environment.

ILO. 2016. [Guide on the Harmonization of Labour Inspection Statistics](#).

ILO. 2017. [Quick Guide on Sources and Uses of Labour Statistics](#).

ILO. 2018. [Decent Work and the Sustainable Development Goals: A Guidebook on SDG Labour Market Indicators](#). Section 2.1.7 on Occupational Injuries. Second edition to be released soon.

ILO. 2019. [Violence and Harassment Convention](#), 2019 (No. 190).

ILO. 2020. [COVID-19 and the new meaning of safety and health at work](#). ILOSTAT website – ILOSTAT blog.

ILO. [ILOSTAT website - Indicator description: Labour inspection](#).

ILO. [ILOSTAT website - Indicator description: Occupational injuries](#).

ILO. [ILOSTAT website – Topic Safety and Health at Work](#).

ILO. [LEGOSH - Global database on occupational safety and health legislation](#).

ILO. [Online Encyclopaedia of Occupational Health and Safety](#).

ILO: PEMBER, R. 1998. [Compilation and presentation of labour statistics based on administrative records](#).

Statistics Finland. 2004. [Use of Registers and Administrative Data Sources for Statistical Purposes - Best Practices of Statistics Finland](#).

UN. 2011. [Using Administrative and Secondary Sources for Official Statistics: A Handbook of Principles and Practices](#). United Nations Economic Commission for Europe.

UN. [Website on the Sustainable Development Goals](#).

United Nations Statistics Division. *Metadata for SDG indicator 8.8.1: “Frequency rates of fatal and non-fatal occupational injuries, by sex and migrant status”*. [Sustainable Development Goal indicators website - SDG Indicators Metadata repository](#).