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OCCUPATIONAL DISEASES CASE INVESTIGATION PROCEDURE

TECHNICAL PAPER

GOBIERNO DE ESPAÑA

MINISTERIO DE TRABAJO Y ECONOMÍA SOCIAL

insst
Instituto Nacional de Seguridad y Salud en el Trabajo

OCCUPATIONAL DISEASES CASE INVESTIGATION PROCEDURE

Title:
Occupational Diseases Case Investigation Procedure

Issuer:
National Institute for Safety and Health at Work (INSST), Autonomous Organisation, Spanish Government [Instituto Nacional de Seguridad y Salud en el Trabajo (INSST), O.A. M.P.]

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www.insst.es

Composition:
INSST Publications and Editions Service

Edition:
Madrid, November 2020

NIPO (online):
118-20-106-5

General Catalogue of Spanish Official Publications:
http://cpage.mpr.gob.es

INSST Catalogue of Publications:
http://www.insst.es/catalogo-de-publicaciones/

datos abiertos

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INTRODUCTION

In recent years we have seen a process of change and improvement in the field of occupational diseases, in both regulatory and scientific-technical fields.

In this context current policies on occupational diseases align, both in terms of social security and in the field of occupational risk prevention. The basis for a harmonized procedure of the investigation of occupational diseases starts here.

Several protocols have been developed progressively in our country. They address the investigation of occupational diseases from an epidemiological point of view, with the first and most noteworthy being those of Region of Murcia and the Community of Navarra.

More recently the Valencian Community has set up the System for Health Research and Occupational Epidemiology Monitoring (SISVEL), based on occupational diseases reported by primary-care and specialised physicians from the National Health Service.

The result of the implementation of this system has been an important step. In only five years the Valencian Community has evolved from being one of the regions with the fewest reported occupational diseases to one of the regions with the highest number of reported cases, in terms of absolute numbers.

A large amount of resources has been dedicated to investigate work accidents at companies, using standardised investigative procedures, which are now fully accepted as usual practice in occupational risk prevention. However, this has not occurred in the case of occupational diseases. One of the most notable problems is the lack of a harmonised procedure for field investigation of occupational disease cases in companies.

This Technical Document seeks to introduce a framework of reference for occupational diseases investigation at companies based on occupational risk prevention criteria. As a result we will be able to deepen our knowledge on this topic.

BACKGROUND

At the 2013 ILO Governing Body's meeting, the third agenda item addressed *the "Prevention of Occupational Diseases"*. (Minutes of the 317th Session of the Governing Body of the International Labour Office. March 2013, retrieved from: http://www.ilo.org/wcmsp5/groups/public/---ed_norm/---relconf/documents/meetingdocument/wcms_214427.pdf https://www.ilo.org/wcmsp5/groups/public/---ed_norm/---relconf/documents/meetingdocument/wcms_214435.pdf)

The following was established in point A-2 "*Magnitude of the Problem*" of the resulting report:

> *"A-2. It is estimated that there are approximately 2.02 million deaths worldwide due to work-related diseases annually. There are around 160 million cases of non-fatal occupational diseases as well. In addition to causing immeasurable human suffering to victims and their families, these diseases result in significant economic losses to businesses and companies as a whole, including loss of productivity and reduced work capacity. The ILO estimates that approximately four percent of worldwide gross domestic product (GDP), or US$ 2.8 billion, is lost from direct and indirect costs due to occupational accidents and diseases."*

In the same document, point II deals with "Data collection system for occupational diseases" and point A-13 highlights the following:

> *"A-13. Occupational risks exist everywhere and can affect anyone. However occupational diseases may be invisible in public policy discussion, since in most countries, especially developing countries, there is very limited reporting of such diseases. The long latency period of many diseases, such as occupational cancer, further aggravates the difficulties in recording and reporting them. Another problem is the weak capacity for both occupational health and occupational exposure monitoring. Most countries' official national statistics are based on reported data cover only a fraction of real cases, reflecting the difficulties in defining, recognizing and reporting occupational diseases..."*.

Finally, at point IV, the following activities are proposed:

"39. A concerted effort is needed at international and national levels to address the "invisibility" of occupational diseases and to correct the decent work deficits which are the root cause of these diseases. Fight against occupational diseases must hold a more prominent role in the global and national agendas for a preventive culture in safety and health. Greater efforts are required to compile relevant data and carry out research on local situations (...)".

"40. An effective prevention of occupational diseases requires the continuous improvement of national OSH systems, inspection and prevention programmes and compensation systems in all member States, through partnership between governments and employers' and workers' organizations (...)".

Regarding our country there is a general social consensus of dealing with the knowledge of occupational disease which is integrated into the Spanish Strategy on Occupational Safety and Health at work, 2015 - 2020 (EESST 15-20).

This Strategy in Objective 3.B, Occupational Diseases set out:

"The prevention of Occupational Diseases is one of the areas that should be developed more intensively, especially in sectors and activities with higher incidence rates. It is therefore essential to promote the study and research of occupational diseases and work related diseases, and to better identify the causal agents, their effects, and preventive measures...("Spanish Strategy on Occupational Safety and Health 2015 - 2020" retrieved from http://www.insht.es/InshtWeb/Contenidos/Documentacion/ESTRATEGIA%20SST%2015_20.pdf)

In accordance with the Agreement on Proposals for Tripartite Negotiations to Strengthen Economic Growth and Create Jobs, dated 29th July, 2014 ("Agreement on Proposals for Tripartite

Negotiations to Strengthen Economic Growth and Create Jobs" recovered from http://www.ugt.es/Documentos%20de%20apoyo/Acuerdo_Propuestas_negociacion_tripartita_fortalecer_crecimiento_economico_y_empleo_29072014.pdf) *it needs to ensure the adequate registry of occupational diseases in order to increase social protection and avoid a shift in spending towards the National Health System. For this, in collaboration with the Autonomous Communities, appropriate procedures and training will be implemented for health professionals in order for occupational diseases to be classified appropriately. The improvement in the exchange of information and coordination among health professionals, both in the public health system and in prevention services, should act to promote the early detection of occupational diseases and, consequently, act in a quicker and more efficient manner.*

(…) In view of the foregoing, the following lines of action are proposed:

1. Encourage and improve study and research of occupational diseases, as well as their detection. The highest priority must be placed on prevention before rehabilitation."

The effort, therefore, to work on a harmonised procedure for the investigation of Occupational Disease cases is aligned with current policies in this area, from both the Social Security field and the Occupational Risk Prevention field. It is useful as a practical tool for the real achievement of these objectives.

APPLICABLE REGULATIONS

GENERAL REGULATIONS FOR OCCUPATIONAL RISK PREVENTION (ORP)

In our country, we have witnessed a process of improvement in the regulatory field of Occupational Disease in recent years.

The current regulations on Occupational Risk Prevention establish the employer's obligation to investigate all events causing harm to worker health or when, using health monitoring, there is evidence that current preventive measures are insufficient (*art. 16.3 Law 31/1995*).

The application of the results of the investigation contributes to the principle of ongoing improvement of prevention, in accordance with the applicable regulations (*paragraph 2 of article 14 Law 31/1995 as amended by Law 54/2003).*

Precedents from June 2002's ILO Recommendation on a new list of occupational diseases and *European Commission Recommendation 2003/670/EC of 19 September 2003*, on the European List of Occupational Diseases, this was integrated into the Spanish regulation (*RD 1299/2006)* where is the *"List of occupational diseases in the Social Security system"* that mean adaptation to progress on the list of Occupational Diseases set up in 1978. Subsequently, another normative (*Order TAS/1/2007)* regulates the system and notification procedure.

Both regulations bring our Occupational Diseases system closer to those of European countries, as well as to the guidelines of the European Project for European Occupational Disease Statistics (EODS), which is aimed at harmonising European Statistics on Occupational Diseases.

The current regulations also establish important tools for the establishment of a harmonised framework for Occupational Physicians and Prevention Technicians, such as the provision of a Diagnostic Criteria Guide, which development by the National Social Security Institute allows lower variability in the medical diagnosis of Occupational Diseases and, therefore, greater equity and quality in terms of worker welfare.

REGULATIONS ON ACTIVITIES OF OCCUPATIONAL RISK PREVENTION SERVICES IN THE FIELD OF OCCUPATIONAL DISEASES

The regulatory updates concerning the Occupational Prevention Services have also incorporated new elements, which strengthen the development of their activities in the field of Occupational Diseases.

The specific Spanish regulation published in 2010 (*Order TIN/2504/2010)* establishes that annual reports must report about occupational diseases investigated and information about workers' health hazards.

Subsequently, another Spanish regulation (*RD 843/2011)* establishes the basic criteria for the organisation of healthcare resources to carry out healthcare activities articulates in article 3 "Healthcare Activities of Prevention Services":

The activity to be carried out by the healthcare services part of the occupational risk prevention services will include (inter alia):

- *As soon as they are known, study diseases that are likely work-related, for the sole purpose of identifying any relationship between the causes of the illness and occupational workplace risks.*

- *The communication of any diseases that could qualify as occupational diseases through the competent body of the Autonomous Government in the Region.*

HEALTH HARMS DUE TO ACCIDENTS AT WORK AND OCCUPATIONAL DISEASE IN LAW 36/2011, OF 10 OCTOBER, REGULATING SOCIAL JURISDICTION

Law 36/2011 article 2 (sections b and e) fully integrates all matters related to Work-Related Accidents and Occupational Diseases into the Social Jurisdiction, from the perspective of the total compensation of health harms, including the responsibility of the Insurance Entity and

without omitting the Public Administrations in risk prevention duties with respect to all of their "workers".

It explains that the Burden of Proof corresponds to the insurance entity and those responsible for prevention established in article 96.2 that "*In the processes around responsibilities arising from accidents at work and occupational diseases, safety debtors and those involved in the cause of the injurious result shall be responsible for proving that necessary steps have been taken in order to prevent or avoid the risk, as well as any excluding or diminishing factor of its responsibility. The non-reckless guilt of the worker's professional imprudence may not be considered a waiver of liability.*"

Finally, the *fifth and final Provision*, the System for assessing health harms resulting from Work-Related Accidents and Occupational Diseases, is added:

> *"Within six months from the entry into force of this Law, the Government will adopt the necessary measures to approve a system for assessing damages derived from work accidents and occupational diseases, through a specific system of compensation scale updated annually, for the objective compensation of said damages as long as the victims or their beneficiaries do not prove superior damages."*

BASIS OF PROPOSAL

Both the causes and origin of health events must be correctly identified in order to ensure the effectiveness and efficiency of preventive measures.

An investigative procedure that guarantees the collection of sufficient, quality information is needed in order to identify causes and their origin.

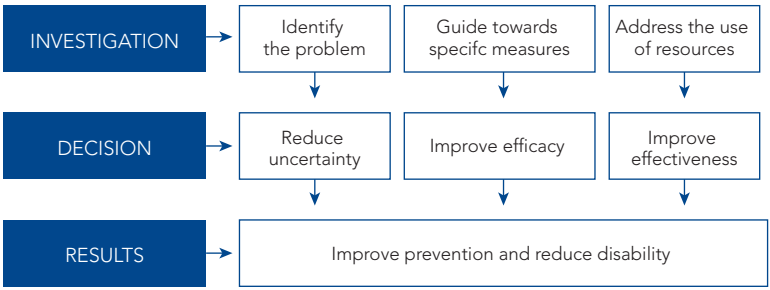


Figure 1. Investigative impact on improved prevention

Field research has an added value to the knowledge of the disease's causes and its origins, and, consequently, for the development of preventive measures, that is not attainable by information gathered through notification systems (Figure 1).

It is therefore sought to take advantage of information gathered in an individualised action such as field investigations in order to generate collective (epidemiological) knowledge on occupational disease, its causes and origin and, consequently, generate actions with specific contents. In other words, this means to act on the origin, not on its manifestations.

The 2016 Action Plan on the Spanish Strategy on Safety & Health at Work 2015-2020 (Objective 2) articulates the following information and research measures:

"Improve the handling and use of information gathered by the labour inspectorate in the investigations of occupational accidents and diseases."

PREVIOUS SUCCESSFUL PROJECTS

As a benchmark for success of procedures intended to improve the knowledge of professional contingencies, the National Institute of Safety and Health at Work has been coordinating an Information System. It is aimed at identifying the causes of Fatal Work Accidents using a minimum data set collection and the allocation of causal facts by means of a system of standardised causal groups.

This procedure values the information collected in work-related accident field investigation and generates high quality information which has greater use for preventive actions than the information collected from the notification system.

Therefore, this experience constitutes a background of translational interest for the investigation and epidemiological study of occupational diseases.

DIFFERENTIAL FACTS FROM THE INVESTIGATION OF CASES OF OCCUPATIONAL DISEASES AS OPPOSED TO WORK ACCIDENT INVESTIGATION

The process of occupational disease is different from the process followed by the accident, and this difference is much more evident as the presence of an objective factor such as a certain pollutant becomes less important in the occupational exposure panorama.

The most critical point in the occupational disease investigation is related to its causality.

The establishment of the **cause-and-effect relationship** is complex due to two factors:

- The interval between exposure and disease onset (latency period): this interval is dependent **on the agent nature**, as well as the **time and intensity of exposure**, in such a way that:

- In high-intensity exposures, where the risk is very dangerous, this latency period will be shorter, and establishing a cause-effect relationship is less complex.

- In exposures to less dangerous risks and in low intensity exposures, this latency period will be longer; in consequence, it will be more difficult to establish a cause-effect relationship.

- The **nature of the disease**: The disease may present a variability of behaviours that are included in these two extreme profiles:

  - Diseases with an **acute onset**, a rapid progression of symptoms, where the specificity of the causal agent is high, and exposure is unusual outside the work environment (e.g. lead and lead poisoning, mercury and hydrargirism, etc., some types of allergies such as polymers), consequently make it easier to establish a cause-effect relationship.

  - Diseases with a **sub-acute or chronic onset**, with a slow progression and non-specific or degenerative symptoms, and an agent that may be common outside the work environment (e.g. cancer, chronic bronchitis or musculoskeletal diseases), consequently make it more difficult to establish a cause-effect relationship.

This variability is a function of agent characteristics, action mechanisms in the organism, and exposure intensity.

Latency period and the nature of disease produce different epidemiological processes that need a differentiated investigation approach (Figure 2).

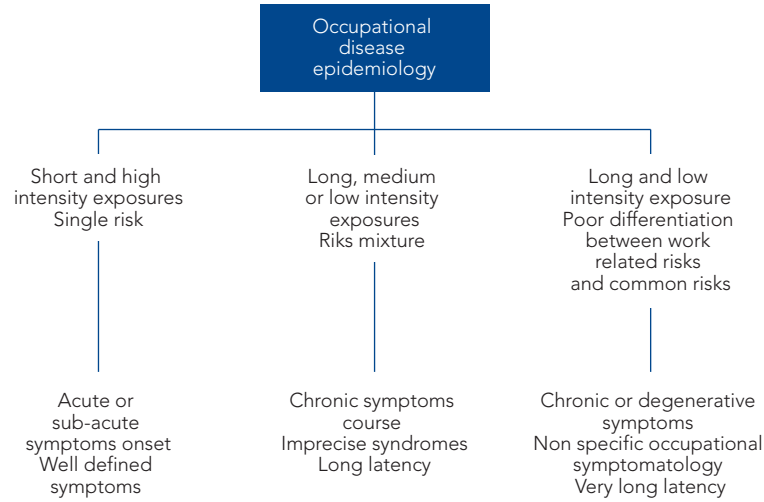


Figure 2. Epidemiology of Occupational Disease: exposure pattern and clinical manifestations

FIELD INVESTIGATION OF OCCUPATIONAL DISEASE CASES

Occupational disease investigation follows a basic structure which is well known by field epidemiology. Diseases are characterised by the answer to questions in Table 1.

BASES FOR THE INVESTIGATION APPLIED TO THE DISEASE STUDY	
What?	The nature of the disease
Who?	The worker's characteristics and/or occupational activity
Where?	The characteristics of the workplace and its environment
When?	The time of illness onset
How?	Movements, methods or means of contact with the potential causal agent
Why?	The agent or determining causes of the disease onset and its origin

Table 1. Aspects of the disease corresponding to the field investigation.

Field investigation is a **reactive technique** that responds to an event that occurred and is oriented to the identification of causes, so as to take the required measures to prevent the recurrence of the case and prevent new cases.

In order to resolve the occupational disease answering these six questions requires coping with the investigation, covering both the workplace inspection and collecting medical and occupational information provided by sick workers. The information procedures would involve four dimensions:

Technological relationship between cases and work process

The aim to study this dimension is to identify the disease risk at the exact point in the working process in which it appears, and requires:

- The working process analysis.
- The identification of tasks into the working process or sequence.
- The identification of the technology used in the performance of those tasks.

THE ARDYSTIL SYNDROME CASE

The importance of investigating the technological relationship of cases is clear in the outbreak investigated by Moya et al of 22 cryptogenic organising pneumonia cases that occurred in the Valencian Region.

Moya carried out an epidemiological survey after the identification of two index cases of a respiratory illness treated at Alcoy hospital in 1992, which was related to a previous case in 1991. The three cases were females working in textile companies.

Eight companies in the region and 257 workers were included in this epidemiological survey, 22 of which met the case definition. Six deaths occurred.

Of the 22 cases, twenty occurred at two companies, and **all ill workers performed textile printing tasks by using the same technology.**

Unlike the other companies, these two companies replaced the product used for spraying garments (Acramin FWR for Acramin FWN) in the working process. Both switched the brush application for an aero-spraying application and both introduced a solvent instead of water as a diluent.

The cases' common exposure to this technology (aero spraying with Acramin FWN) explained the cases onset, and identified the cause of the outbreak

Source: Moya C, Newman AJ, Antó JM. Collaborative Group for the Study of Toxicity in Textile Aerographic Factories; Outbreak of organising pneumonia in textile printing sprayers. The Lancet. 1994; 344:498-502.

Place and time dimensions:

The aim of investigating these dimensions is to identify:

- The proximity of cases either to company facilities (infrastructure, common facilities or location of equipment and machinery), or to a particular location where certain tasks are carried out.

- The identification of a chronological relationship between cases.

This requires collecting information about:

- The company's location on plan for the working process and its tasks.

- The location of cases throughout the working process or sequence.

IRRITATIVE SYNDROME IN A TEXTILE INDUSTRY

Based on an index case of an upper respiratory tract irritation syndrome in a female worker from a textile company of 130 employees, Zimmermann conducted an epidemiological survey identifying 81 additional cases, confirming the existence of a cluster over a period of nine days.

Throughout its investigation, Zimmermann analyzes the production phases identifying four processes: Cutting, Preparation, Assembly and Ironing, and two Administration and Maintenance departments.

The working sequence and the aggregation of cases in each task (technological linkage) was analysed, placing them in their physical location at company, drawing what we can refer to as a "technology map" (matching the case distribution with the production process).

The results show the presence of cases in the four production sections (no cases among administrative staff), with a higher incidence among workers who performed sewing and ironing tasks.

The temporal and spatial distribution of the cases showed the following sequence of incidence: cutting, preparation, assembly and ironing. A match was identified between the working sequence and the onset of cases.

The onset of symptoms coincided with the introduction into the production process of a new fabric treated with cellulose. This type of fabric had not been used before in the manufacturing process.

Potentially involved Agent

The aim of investigating this dimension is to identify the outbreak's potential causal agent. The investigation requires:

- The identification of raw materials, substances, products or materials that are used or produced in one or several tasks, including personal or collective protection equipment.
- The identification of additives, substances or products incorporated into the raw material along the production process.
- The diffusion of physical, chemical or biological pollutants from structural elements, walls, etc., the emission of pollutants from common workplace facilities or pollution from industrial operations.
- In the case of musculoskeletal disorders, identifying ergonomic risk factors due to workplace activity.

CASES OF DERMATITIS AND CONJUNCTIVITIS IN KITCHEN STAFF

Hannah Oliver and colleagues analysed an outbreak of eight cases of conjunctivitis and skin disorders in uncovered areas afecting a hotel's kitchen staff.

The case's spatial distribution showed that these occurred in only one of the hotel kitchens.

Initially, the causal hypothesis was the exposure to irritant cleaning products. However, an inspection of the area revealed the existence of two **insect killers' electric lamps** that emitted ultraviolet radiation. A subsequent environmental evaluation revealed harmful radiation levels.

The lamps had been changed nine months prior to the cases onset. It was detected that the new ones **emitted UVC radiation**, and as such were inadequate for this type of device.

In the outbreak investigation, Hannah Oliver discards the relationship between cases and exposures due to the tasks development by the staff (e.g. use of cleaning products) and finds the outbreak origin in an incorrect facility located in the premises of the company where the cases onset.

Source: Oliver H, Moseley H, Ferguson J, Forsyth A. Clustered outbreak of skin and eye complaints among catering staff. Occupational Medicine. 2005; 55:149–153.

Attendant Facts

The goal in investigating this aspect is to identify events that occurred at the workplace environment, and/or working procedures that could have led to a modification in the worker's risk exposure. The following must be identified to be studied:

- History of accidental exposures (spillage, leakage, etc.).
- Usual procedures in the workplace but carried out in an incorrect or dangerous way.
- Inadequate methods or conditions in equipment or tool use.
- Inadequate methods or conditions in substances handling.
- Innovative process for new procedures or modification of existing procedures, modification of substances, products or materials.
- The lack of risk preventive measures or technology: The personal or collective protections implemented; ergonomic workstation; working times and pace, etc.
- Deficiencies in waste management, DDD operations, thermal or acoustic insulation features, nature of walls, sources of environmental pollution.
- Poor maintenance of facilities or structural elements.
- Pollution or degradation of raw, auxiliary materials or products used in production process.

ATTENDANT FACTS: SOME EXAMPLES

THE ARDYSTIL SYNDROME CASE: Innovation in priming process by incorporating a new technology and the substitution of the product used for spraying garments: Acramin FWR for Acramin FWN modified the brush application by aero spraying and introduced a solvent instead of water as a diluent.

IRRITATIVE SYNDROME IN TEXTILE INDUSTRY: Innovation in raw materials used in clothing.

CASES OF DERMATITIS AND CONJUNCTIVITIS IN KITCHEN STAFF: Inadequate maintenance of insecticide electric devices by introducing lamps with UVC emission.

Occupational disease causal investigation

Agents capable of producing occupational diseases can be summed up in two different areas:

- Exposure to **external agents (working environments)**.
- **Biomechanical or mental requirements** for carrying out the task.

Risk prevention organisation and its resources are relevant modulators for both factors.

The investigation of occupational or work-related disease therefore requires the investigation of possible causal agents in these three areas: Working Environments, Task requirements, and Organizational Modulators (Figure 3).

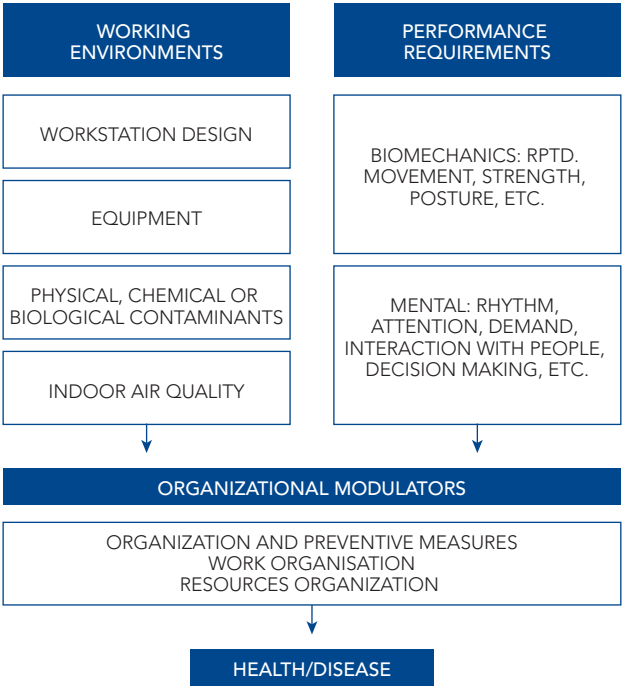


Figure 3. Key areas with the potential to cause occupational disease.

The potential aggregation of cases of occupational disease

The occurrence of an extensive accident with several victims is a low frequency event. On the contrary, occupational disease tends not to present as isolated cases. Therefore, known or notified cases must be taken as "index cases"; other cases may have occurred previously or may occur subsequently.

Some reasons lead to a false perception of occupational disease as isolated cases: variability in the individual reaction to the agent and disease.

- Cases may present different latency periods and, therefore a time difference in its onset will occur.
- Differences in exposure characteristics: start, duration, and intensity.
- Diversity in levels of healthcare. On many occasions, healthcare is given at Primary Care or National Health System Hospitals, which results in a failure to classify the disease as occupational.

Reporting occupational disease cases does not exclude unreported cases. *Upon investigating an occupational disease, an investigation will need to be carried out in order to eliminate the possibility of other cases occurring.*

Fact verification

Checking exposure and preventive measures in field investigation will also enable circumstances in which occupational disease has occurred.

This depends on the disease's nature and latency and exposure should refer to an indicative value, following the time periods given in Annex I: "Indicative latency and induction periods"

The following should be considered:

- Worker's usual workplace, tasks or activities.
- Worker's unusual or one-off task(s) or activity(ies).
- Changes in processes, technologies or substances.

- Knowledge of any events occurring concurrently to the case onset: innovative processes, new materials, incidents, maintenance operations, unusual operations in workplaces, any deviations from normal functioning, etc.

As a guide, Annex VII lists elements that can facilitate exposure verification and preventive measures.

DEVELOPMENT AND VALIDATION METHODOLOGY

The development and validation of the Occupational Disease Investigation Procedure included three stages (Figure 4).

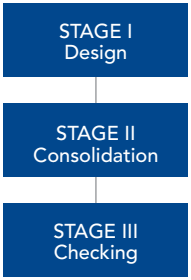


Figure 4. Stages in investigative procedure development

A group of 17 experts have taken part in the Design and Consolidation Stages. They approach these stages from different Areas of Interest in the field of Occupational Diseases (Table 2).

AREA OF INTEREST	NUMBER OF EXPERTS
Affected worker scope: Trade unions	4
Prevention service companies scope: Internal and External Prevention Services and insurance companies	3
Supervisor scope: Labour and Social Security Inspectorate, Ministry of Health, Regional Government's Technical Bodies.	5
Professional Scope: Occupational Medicine Organisations	3
Methodological Scope: Public research organisations, University.	2
TOTAL NO. OF EXPERTS	**17**

Table 2. Distribution of experts by Interest Group

Once the procedure was consolidated, it was validated through a field trial, applying it to 21 suspected occupational disease incident cases. A total of 26 indicators were evaluated with three dimensions: Needs, Applicability, and General evaluation. A Likert scale was

applied, and the degree of agreement between researchers was assessed using the AGREE Instrument standardised scoring procedure.

In this validation phase, a total of 13 experts participated from Company Prevention Services, External Prevention Services and Professional Prevention Organisations.

In most items, the degree of consensus obtained among experts was **Excellent** (90-100%) or **High** (70-89%) for dimensions related to **Need, Sufficiency** and **Usefulness** of the procedure applied.

In terms of **Applicability**, the procedure made it possible to systematise and target the case investigation process. Regarding its **Utility**, the procedure has shown usefulness in identifying the occupational origin of disease investigated. This helps to improve occupational diseases notification and also makes it possible to identify preventive measures to be taken (Table 3).

Degree of consensus among experts		Standardised Score %
HIGH (70-89%)	It made it possible for you to collect the information in a systematised manner.	82.5
	It has guided you in the investigation process.	81.7
	It has allowed you to identify the information you must communicate to each key agent and person involved (worker, employer, prevention service, etc.)	80.2
	The algorithms have made it easier to guide the investigation process	77.0

Table 3. Degree of consensus and standardised score for the utility of applying the procedure in the investigated case

PURPOSE

Applying this procedure, it will be possible to do the following:

- Identify causal events associated with the occurrence of occupational or work-related diseases and consequently act on them, both in that workplace and other workplaces with similar work conditions where similar diseases are likely to occur.

- Carry out occupational or work-related disease case investigations in a structured and harmonised way.

- Guarantee equity towards the worker who suffered from disease in terms of their rights to investigation of its origin, nature, and preventive measures.

The procedure is configured around three specific action areas:

- An occupational health interview with the worker, based on their own account as the affected person.

- An analysis of the preventive documentation.

- The information obtained from directly observing the work conditions.

Bringing together a technical perspective with information obtained directly from workers through one-to-one interviews, it is sought to extract the data set which makes it possible to learn about the causes of the occupational disease or work-related illness as well as preventive and/or corrective measures that must be taken to avoid new cases.

These corrective measures will result from the agreement of the different disciplines and Prevention Service professionals involved in the investigation.

In summary, the intention is that the occupational disease or work-related illness is used in order to create a preventive and medical occupational research procedure for corrective, preventive steps that

enable the elimination or control of the risks related to the source of the damage to be taken.

Part of the research process itself is the communication of the results to both the affected worker and those responsible for taking preventive measures in the company, as well as making these measures available to the labour and health authorities.

The contents of these reports must be differentiated. Only documentation submitted to workers may contain clinical information.

As a consequence, the investigation mainly pursues preventive purposes.

OBJECTIVES

- Guide Prevention Services technical and healthcare staff on how to approach the study of the work conditions that surround the occupational disease event.

- Knowledge of the diseases' characteristics through the occupational health interview with the worker based on their own report as the affected person, as well as the analysis of the preventive documentation on the position, along with information obtained directly from observing work conditions.

- Identify the action points on risks present in the workplace or other similar work conditions, and propose necessary corrective measures to avoid the occurrence of new cases.

- Promote good practices in relation to the management of occupational diseases.

- Contribute to the protection of especially sensitive workers and incorporate a gender-based focus on occupational diseases.

APPLICATION

The procedure will apply to all occupational pathologies, that is, both occupational diseases and work-related illnesses.

The investigation begins after the prevention service is made aware of the case, and activates one or several processes for collecting either field or documentary information which, once analysed by experts, should lead to scientific conclusions as the basis for planning protective measures and improving the preventive organisation.

At the beginning of the procedure, the person in charge of the Prevention Service will carry out the following actions (see *Algorithm 1 of the Start of the Procedure*):

- Request a report on the possible professional connection of the disease from the occupational health monitoring area.

  This action will be carried out by the occupational physician by studying the available occupational medical information. This report shall contain the following information at a minimum:

  - Determination of the nature of the disease.
  - Estimated latency period.
  - History of the worker's current or previous exposure.
  - Plausibility of the causal relationship with the history of occupational exposure.

- Once the potential relationship between the disease and the occupational exposure has been determined, the person responsible for the Prevention Service will designate a multidisciplinary research team whose composition will include at least:

  - Occupational Physician.

- Prevention Technician for the preventive specialties related to the potential cause of the condition.

- Prevention Delegate.

- Company Representative.

It is a prerequisite for the initiation of the investigation to convene the Prevention Delegates and inform them of the action to be taken, as well as of their right to consultation and participation and to make any observations they deem appropriate. The rights of the Prevention Delegate are covered in the Spanish Occupational Risk Prevention law (*art. 36.2.b Law 31/1995*) and in the Prevention Services Regulations (*art. 1.2, art. 3.2 and art. 16.2 RD 39/1997*). In accordance with the articles of the aforementioned regulations, it must be noted that Prevention Delegates have the right to be consulted by employers in due time and that they have the right to formulate proposals in the Health and Safety Committee and to receive reasoned responses.

It is from this moment onwards that the Investigation Procedure will be applied.

USERS

This procedure is designed for the use of the Prevention Services in the study of occupational and work-related diseases.

All health professionals and technicians must assume their role and incorporate their knowledge and experience into this process, in the context of multidisciplinary action.

However, in the procedure's current conception, it can be used by professionals in the Technical Organisations of the Public Administrations with professional competences in the field of Health and Safety at Work, by the Labour and Social Security Inspectorate and by Insurance Professionals.

Confidential medical information shall only be accessible to health personnel or those duly authorised by the employee concerned.

The involvement of all these professionals and organisations is a determining factor in the quality of the interventions carried out under this procedure and in their continuous improvement.

STRUCTURE

The information to be gathered in the application of the procedure is organised into seven sections, to which a block of annexes is added in order to incorporate relevant complementary documentation. In addition, the document includes a series of algorithms that present the application of the procedure in a simplified manner.

Section 1:	Identification Data
Section 2:	Medical-Occupational Interview
Section 3:	Occupational Risk Prevention Information
Section 4:	Conclusions
Section 5:	Preventive Measures
Section 6:	Minimum Data Set
Section 7:	Risk tables
Annexes:	Documentation of Interest to be Annexed to the Research
Appendix:	Algorithms related to Integrated Processes incorporated into the Research

The procedure has an *instructive document (see Annex II: Application Instructions)* in which each procedure section is described in terms of the information it must contain, possible sources of collection of such information and recommendations or critical aspects that the investigator must have in mind through the inclusion of clarifying notes. These notes serve to make possible quick consultations regarding questions about contents potentially arising throughout the investigation process.

There is also included the information-gathering document template for the use in occupational disease research. *(See Annex III: Information-gathering document).*

BIBLIOGRAPHY

- Roel Valdés, José María, Maqueda Blasco, Jerónimo. Field testing of an investigative procedure for work-related disease cases. Work safety measures [Internet]. Jun 2013 [cited 10 Oct 2018]; 59 (231): 227-234. Available at: http://scielo.isciii.es/scielo.php?script=sci_arttext&pid=S0465-546X2013000200004&lng=es. http://dx.doi.org/10.4321/S0465-546X2013000200004.

- Païvï Hamalaïnen, Jukka Takala and Kaija Leena Saarela. Global Estimates of Fatal Work-Related Diseases; American Journal of Industrial Medicine. 2007; 50: 28-4.

- García AM, Gadea R, López V. Estimated mortality attributable to occupational diseases in Spain 2004. Spanish Journal of Public Health 2007; 81: 261-270.

- Ministry of Employment and Social Security Yearbook of Labour Statistics and Social Affairs. [case study online]. Madrid: Ministry of Employment and Social Security [accessed 6 May 2013]. Available at: http://www.empleo.gob.es/estadisticas/ANUARIO2011/welcome.htm.

- Montserrat García Gómez, Rosa Urbanos Garrido, Rosario Castañeda López and Patricia López Menduiña. Direct health costs of occupational lung and bladder neoplasms in Spain in 2008. Spanish Journal of Public Health 2012; 86: 127-138.

- Law on Prevention of Occupational Risks Law 31/1995, of 8 November Official State Bulletin No. 269 (10/11/1995).

- ORDER TIN/2504 of 20 September 2010, implementing Royal Decree 39/1997, of 17 January, approving the Regulation of Prevention Services, with regard to the accreditation of specialised entities as prevention services, report of preventive activities and authorisation to carry out the audit activity of the companies' prevention system. Official State Bulletin No. 235 (28 September 2010).

- Royal Decree 843/2011, of 17 June, establishing the basic criteria regarding the organisation of resources to develop prevention services' health activity. Official State Bulletin No. 158 (4 July 2011). Regulatory Law of Social Jurisdiction. Law 36/2011 of 10 October. Official State Bulletin No. 245 (11 October 2011).

- Institute for Occupational Safety and Health [website]. Murcia. Region of Murcia; [accessed 6 May 2013]. Protocol of Investigation of Occupational Diseases. Available at: http://www.carm.es/web/pagina?IDCONTENIDO=3508&RASTRO=c722$m&IDTIPO=100

- V. García López. Evaluation of the Epidemiological Monitoring Programme in Occupational Health: Sentinel Physician Network of Occupational Health in Navarra, (1998-2007). Annals of the Navarra Health System 2011; 34 (3): 419-30.

- Department of Health [website] Valencia Regional Government. [accessed 23 April 2013]. Guide for reporting suspected occupational diseases Available at: http://www.sp.san.gva.es/DgspPortal/docs/guia_com_enf_sos.pdf

- Antonia Almodóvar Molina, Francisco Javier Pinilla García. National Survey on Health and Safety Management in Companies (ENGE 2009). [case study online]. Madrid: National Institute of Workplace Safety and Hygiene; 2009 [accessed 6 May 2013].Available at: http://www.oect.es/Observatorio/Contenidos/InformesPropios/Desarrollados/Ficheros/Informe_%20ENGE%202009.pdf.

ANNEX I: INDICATIVE LATENCY AND INDUCTION PERIODS

GROUP 1
OCCUPATIONAL DISEASES CAUSED BY CHEMICAL AGENTS
INDICATIVE REFERENCE TIMES FOR EXPOSURE VERIFICATION

NOTES:
DOES NOT INCLUDE CARCINOGENIC EFFECTS.
TIMES SHOULD BE INTERPRETED AS INDICATIVE REFERENCES.
Times stated in the following publications have been used to create recommendations:

- Help Guide for the Evaluation of Occupational Diseases, first edition INSS-2017
- Guidelines for clinical decision making in occupational diseases, INSSBT- ISCIII.
- Fisterra Guides for Primary Care Physicians.

	AGENTS	EXPOSURE REFERENCE
ACUTE OR IRRITATIVE MANIFESTATIONS	Includes chemical agents	**Recommendation:** Investigate recent exposure to the agent and its relationship to established Occupational Exposure Limits: VLA-EC®, VLA-ED®; VLB®. *NOTE: In sudden onset manifestations of both toxic and irritant nature, exposure may have occurred either immediately or within a few hours.*
ASTHMA AND ALLERGIC DERMATITIS: Asthma and allergic contact dermatitis.	• Beryllium (glucinum) and its compounds • Trivalent chromium and its compounds • Nickel and its compounds • Vanadium and its compounds • Iodine and its inorganic compounds • Formic acid, acetic acid, oxalic acid, abietic acid, plicatic acid • Aldehydes: acetaldehyde, acrylic aldehyde, benzoic aldehyde, formaldehyde and glutaraldehyde • Saturated or unsaturated aliphatic hydrocarbons; cyclic or not, constituents of ether, petroleum and gasoline.	**Recommendation:** Investigate the history of exposure to the agent in the last 2 months. *NOTE: Sensitisation to chemical agents requires a prior period of variable exposure that can range from 15 days to 2 months.* *Once sensitisation occurs, onset time of allergic symptomatology may vary.* Asthma: *The appearance of the profile may be immediate after exposure (immediate response) or it may appear hours after exposure has ceased (late response).*

GROUP 1 OCCUPATIONAL DISEASES CAUSED BY CHEMICAL AGENTS INDICATIVE REFERENCE TIMES FOR EXPOSURE VERIFICATION		
ASTHMA AND ALLERGIC DERMATITIS: Asthma and allergic contact dermatitis.	• Amines (primary, secondary, tertiary, heterocyclic) and aromatic hydrazines and their halogen, phenolic, nitrosate, nitrate and sulphonated derivatives • Vinylbenzene (styrene) and Divinylbenzene • Epoxides, ethylene oxide, tetrahydrofuran, furfural, epichlorohydrin, guaiacol, furfuryl alcohol, propylene oxide. • Organic esters and their halogenated derivatives • Polyurethanes (Isocyanates)	Allergic contact dermatitis: *The first symptoms of allergic skin reactions may appear at the first moments of exposure, although there are late responses within five days of exposure.*
CHRONIC RESPIRATORY DISEASE: Chronic obstructive pulmonary disease, chronic bronchitis	• Trivalent chromium and its compounds • Sulphuric acid and sulphur oxides • Hydrogen sulphide • Ammonia • Nitrogen Oxides (Nitric Oxides)	**Recommendation:** Investigate a history of continuous exposure to the agent over a number of years in the last five years. *NOTE: Chronic Obstructive Pulmonary Disease requires a variable but sustained period of years of exposure to the agent. The disease evolves very slowly, so its diagnosis may occur years after exposure to the agent has ceased.*
NEUROTOXIC EFFECTS: Chronic encephalopathy, polyneuropathy, other non-acute neurological effects	• Manganese and its compounds • Alcohols: butyl (butanol), methyl (methanol) and isopropyl (isopropanol) • Saturated or unsaturated aliphatic hydrocarbons; cyclic or not, constituents of ether, petroleum and gasoline. • Halogenated derivatives of aliphatic hydrocarbons, saturated or not, cyclic or not. Methyl bromide, vinyl chloride monomer. Chlorinated and brominated hydrocarbons of the aliphatic series. • Xylene, toluene	**Recommendation:** **Chronic encephalopathy**: Investigate a history of exposure to the agent in recent months or in the last year. **Polyneuropathy:** Investigate a history of exposure to the agent in the last six months or the last year. **Other neurotoxic effects:** Investigate a history of exposure to the agent in recent months or the last 2 years.

GROUP 1 OCCUPATIONAL DISEASES CAUSED BY CHEMICAL AGENTS INDICATIVE REFERENCE TIMES FOR EXPOSURE VERIFICATION		
NEUROTOXIC EFFECTS: Chronic encephalopathy, polyneuropathy, other non-acute neurological effects	• Vinylbenzene (styrene) and Divinylbenzene • Halogenated derivatives of aromatic hydrocarbons. • Nitro-derivatives of aromatic hydrocarbons: nitro-dinitrobenzene, di-nitro trinitrotoluene • Nitrate derivatives of phenols and homologues: dinitrophenol, dinitroorthocresol, dinoseb (2-sec butyl-4,6- dinitrophenol), ioxynil, bromoxynil. • Ketones • Epoxides, ethylene oxide, tetrahydrofuran, furfural, epichlorohydrin, guaiacol, furfuryl alcohol, propylene oxide. • Organic esters and their halogenated derivatives • Glycol ethers: methylcellosolve or methoxyethanol, ethylcellosolve or etoxyethanol, etc. Other ethers not included in the previous section: Methyl, ethyl, isopropyl, dichloroisopropyl ether, etc. • Organophosphates and carbamates • Organochlorines • Carbon oxide (carbon monoxide) • Carbon sulphide	*NOTE: The non-acute neurotoxic effects require a minimum and sustained time of variable exposure depending on the disease, which can vary between 1 month in the case of polyneuropathy, one year in the case of manganese poisoning and 10 years in the case of chronic encephalopathy.*
CHRONIC HYDRARGYRISM	• Mercury and its compounds	Recommendation: Investigate a history of mercury exposure in the past year. *NOTE: Symptoms of chronic hydrargyrism may appear after a minimum and sustained exposure time of 6 months.*

GROUP 1 OCCUPATIONAL DISEASES CAUSED BY CHEMICAL AGENTS INDICATIVE REFERENCE TIMES FOR EXPOSURE VERIFICATION		
LEAD POISONING	• Lead and its compounds	**Recommendations:** Investigate recent exposure to the agent and its relationship to established Occupational Exposure Limits: VLA-EC®, VLA-ED®; VLB®.
CHEMICAL AGENT PNEUMOCONIOSIS	• Beryllium (glucinum) and its compounds • Antimony and derivatives	Investigate history of exposure to the agent in the last 30 years. *NOTE: In the case of Antimony Pneumoconiosis (stibiosis) a minimum and maintained exposure time of 6 months is estimated.*
BONE DISORDERS	• Phosphorus and its compounds • Fluorine and its compounds	**Recommendations:** In the case of bone damage by fluorine, investigate the history of exposure to the agent in the last year. In the case of bone damage due to phosphorus, investigate the history of exposure to the agent. *NOTE: In the case of bone damage due to fluorine, a minimum and maintained exposure time of 1 year is estimated.*
REACTIVE AIRWAYS DYSFUNCTION SYNDROME	• Iodine and its inorganic compounds • Polyurethanes (Isocyanates) • Nitrogen Oxides (Nitric Oxides)	**Recommendations:** Investigate a history of exposure to the agent in the last 12 hours. *NOTE: Minimum exposure time is very short and prolonged exposure to the agent is common.*

GROUP 1 OCCUPATIONAL DISEASES CAUSED BY CHEMICAL AGENTS INDICATIVE REFERENCE TIMES FOR EXPOSURE VERIFICATION		
CHLORACNE	• Phenols, homologues and their halogen derivatives, pentachlorophenol, hydroxybenzonitrile • Halogenated derivatives of aliphatic hydrocarbons, saturated or not, cyclic or not. Methyl bromide, vinyl chloride monomer. Chlorinated and brominated hydrocarbons of the aliphatic series. • Naphthalene and its counterparts • Halogenated derivatives of aromatic hydrocarbons	**Recommendations:** Investigate the history of exposure to the agent in the last 6 months. *NOTE: A minimum and maintained time of exposure to the variable agent is estimated from weeks to months.*
HAEMATOLOGICAL EFFECTS	• Benzene • Nitroderivatives of aromatic hydrocarbons: nitrodinitrobenzene, dinitro Trinitrotoluene	**Recommendations:** Investigate the history of exposure to the agent in the last 6 months. *NOTE: In relation to the indicative times of exposure to benzene, haematological alterations may be caused by a few days in exposure to high concentrations. Other haematological effects have an approximate exposure time of 1 month.*
RAYNAUD SYNDROME	• Glycols: Ethylene glycol, diethylene glycol, 1-4 butanediol as well as nitrated derivatives of glycols and glycerol. • Nitroglycerine and other nitric acid esters.	**Recommendations:** Investigate a history of exposure to the agent, without time allocation. *NOTE: Indicative continuous exposure times may vary between 5 and 10 years.*
KIDNEY DISEASE	• Lead and its compounds • Cadmium and its compounds	**Recommendations:** **Chronic kidney disease:** Investigate a history of exposure to the agent in the last 15 years.
OTHER CHRONIC OCCURRENCES:	INCLUDES CHEMICAL AGENTS	Investigate previous exposure to the agent.

GROUP 2
OCCUPATIONAL DISEASES CAUSED BY PHYSICAL AGENTS
INDICATIVE REFERENCE TIMES FOR EXPOSURE VERIFICATION

NOTES:
CARCINOGENIC EFFECTS ARE NOT INCLUDED IN IONISING RADIATION
TIMES SHOULD BE INTERPRETED AS INDICATIVE REFERENCES.

Times stated in the following publications have been used to create recommendations:

- Help Guide for the Evaluation of Occupational Diseases, first edition INSS-2017
- Guidelines for clinical decision making in occupational diseases, INSSBT- ISCIII.
- Fisterra Guides for Primary Care Physicians.

	AGENT/CONDITION	EXPOSURE REFERENCE
Occupational deafness	Noise	**Recommendations:** **In acute manifestations:** Check recent exposure to noise above peak value, Lpico = 135 dB (C)*. **Hearing Loss or Deafness:** Investigate a history of sustained exposure to noise, LAeq,d = 80 dB (A)*. *(*) Lower exposure action values*
Vascular or angioneurotic affectation caused by mechanical vibrations	Vibrations: frequency range 25 to 250 Hz	**Recommendations:** Investigate a history of exposure to vibration over the past 3 years. *Note: Vascular or angioneurotic disorders may require repeated exposure over time ranging from 1 year (equivalent daily exposure A(8)> 10m/s2) to 3 years (3-10m/s2 equivalent daily exposure).*
Osteoarthritic affectation caused by mechanical vibrations	Vibrations: frequency range 25 to 250 Hz	**Recommendations:** Investigate a history of continuous exposure to vibration over the past 3 years. *Note: Vascular or angioneurotic disorders may involve repeated exposure over time ranging from 1 year (equivalent daily exposure A(8)> 10m/s2) to 3 years (3-10m/s2 equivalent daily exposure).*

GROUP 2 OCCUPATIONAL DISEASES CAUSED BY PHYSICAL AGENTS INDICATIVE REFERENCE TIMES FOR EXPOSURE VERIFICATION		
Bursitis	Work with maintained pressure on the affected joint and extreme positioning.	**Recommendations:** **In acute manifestations:** Check recent history of work with maintained pressure on the affected joint and extreme positioning. **In chronic manifestations:** Check the history of work maintaining pressure on the affected joint and extreme positioning in recent months.
Chronic rotator cuff tendonitis	Forced postures and repetitive movements involving an overload in the movement of the shoulder joint: horizontal or vertical reach movements	**Recommendations:** **In acute manifestations:** Check recent history of extreme movements or overexertion of the shoulder joint. **In chronic manifestations:** Investigate the history of adoption of forced postures or repetitive movements that require the elevation of the elbow or shoulder, or reaching movements that involve the shoulder, over a continuous period in recent months.
Epicondylitis and Epitrocleitis	Work requiring impact or jerking movements, repeated turns of the arm against resistance, as well as forced flex-extension movements of the wrist.	**Recommendations:** Investigate the history of work performance in a continuous manner under the conditions indicated during recent days.
De Quervain's Tenosynovitis, Trigger finger, Tenosynovitis of the extensor tendon of the first finger	Work requiring a strong grip with repeated turns or lateral deviations of the hand, as well as repeated or sustained movements of wrist extension.	**Recommendations:** Investigate the history of work performance in a continuous manner under the conditions indicated in recent days.
Fatigue tearing of the spinous process	Palletising or handling of heavy loads	**Recommendations:** Check recent history of intense or abrupt exertion of spinal musculature.

GROUP 2 OCCUPATIONAL DISEASES CAUSED BY PHYSICAL AGENTS INDICATIVE REFERENCE TIMES FOR EXPOSURE VERIFICATION		
Cubital tunnel syndrome: ulnar nerve compression at the elbow	Extreme movements of hyperflexion and hyperextension of the elbow. Work requiring prolonged elbow support	**Recommendations:** **In acute manifestations:** Check recent history of extreme elbow movements or postures. **In chronic manifestations:** Investigate the history of work performance in a continuous manner under the conditions indicated during recent days.
Carpel tunnel syndrome	Repeated or sustained movements of hyperextension and hyperflexion of the wrist, tight gripping with the hand	**Recommendations:** Investigate the history of work performance in a continuous manner under the conditions indicated during recent months. *Note: Inquire about exposure to vibrations transmitted by hand/arm repeatedly over time, which can vary from 1 year (equivalent daily exposure A(8)> 10m/s2) to 3 years (3-10m/s2 equivalent daily exposure).*
Guyon's canal syndrome	Work involving prolonged compression on the wrist or sustained or repeated pressure on the heel of the hand	**Recommendations:** Investigate the history of work performance in a continuous manner under the conditions indicated during recent days and months.
Peroneal nerve entrapment	Work requiring prolonged squatting	**Recommendations:** Inquire about a history of squatting positions or pressure on the knee either recently or over a continuous period in recent months.
Paralysis of the mayor, angular, rhomboid, circumflex serratus nerves	Work requiring repeated loading on the back of heavy, rigid objects	**Recommendations:** Investigate the history of repeated handling of loads on the back, either recently or continuously in recent months.

GROUP 2 OCCUPATIONAL DISEASES CAUSED BY PHYSICAL AGENTS INDICATIVE REFERENCE TIMES FOR EXPOSURE VERIFICATION		
Radial nerve palsy	Work involving repeated contraction of the long supine muscle (external lateral face of the forearm)	**Recommendations:** Investigate a history of repeated movements or pressure on the forearm, either recently or continuously over the past few months.
Meniscus injuries	Work that requires postures with hyperflexion of the knee in a continuous squatting position for a prolonged period of time.	**Recommendations:** Investigate a history of squatting postures or pressure on the knee that have continued during recent weeks.
Compression or decompression	Hyperbaric environments	**Recommendations:** **In acute manifestations:** Check recent history of decompression operations. **In cases of hearing damage** Inquire about history of work with decompression risk in the last month. **In cases of bone damage:** Inquire about history of work with decompression risk in the last 20 years.
Diseases caused by ionizing radiation	X-rays or natural or artificial radioactive substances or any source of emission	**Recommendations:** **In acute manifestations:** Check history of accidental irradiation and recent dosimetry control. **In chronic non-carcinogenic manifestations:** Investigate history of exposure to ionizing radiation and history of dosimetry control in the last five years.

GROUP 2 OCCUPATIONAL DISEASES CAUSED BY PHYSICAL AGENTS INDICATIVE REFERENCE TIMES FOR EXPOSURE VERIFICATION		
Ophthalmological diseases as a result of exposure to radiation: Cataract, Keratitis, Photo-retinitis, Blepharitis	Ultraviolet radiation in work with exposure to non-ionising radiation with wavelengths between 100 and 400 nm, diseases caused by radiant energy.	**Recommendations:** **In ocular irritative manifestations:** Check for a history of accidental irradiation **In the case of cataracts:** Investigate a history of exposure to UV or RNI radiation in the past year.
Vocal cord nodules	Sustained vocal efforts for professional reasons	**Recommendations:** **In acute manifestations:** Inquire about recent history of intense vocal effort. **In chronic manifestations:** Inquire about the history of sustained vocal efforts during recent months.
Miners' nystagmus	Underground mining work	**Recommendations:** Investigate history of work in underground mines for at least a few years. *Note: Nystagmus may appear in any activity that involves working in very low light conditions for long periods of time.*

GROUP 3 OCCUPATIONAL DISEASES CAUSED BY BIOLOGICAL AGENTS INDICATIVE REFERENCE TIMES FOR EXPOSURE VERIFICATION		
NOTES: **TIMES SHOULD BE INTERPRETED AS INDICATIVE REFERENCES.** Protocols for the National Network of Epidemiological Monitoring (Carlos III Health Institute)		
	AGENT	**EXPOSURE REFERENCE**
Infectious diseases caused by the work of people who deal with prevention, medical care and activities in which a risk of infection has been proven	Any person-to-person-transmissible agent Special Interest: Hepatitis B Virus (HBV), Hepatitis C Virus (HCV), Human Immunodeficiency Virus (HIV), Mycobacterium tuberculosis	**Recommendations:** Investigate the history of direct contact through assistance given to patients or carriers or indirectly through exposure to biological fluids, or materials the patient comes into contact with. Keep in mind the latency and incubation periods of the disease's causative agent: HBV: 1-6 months HCV 15 days to 6 months (may develop asymptomatically). HIV: 1-3 months (detectable antibodies). TB (primary infection or tuberculin reaction +): 2 - 12 weeks. Pulmonary TB: months or years after primary infection. Measles: 8 to 12 days.
Infectious or parasitic diseases transmitted to humans by animals or their products and carcasses	Any zoonotic agent (animal-human transmissible). Special Interest: Brucellosis, Q fever	**Recommendations:** Investigate a history of direct contact with sick or carrier animals or indirect contact through exposure to biological fluids, or materials in contact with the sick animal. Keep in mind the latency and incubation periods of the disease's causative agent: Brucellosis: 5-60 days Q Fever: 14 to 39 days

GROUP 3 OCCUPATIONAL DISEASES CAUSED BY BIOLOGICAL AGENTS INDICATIVE REFERENCE TIMES FOR EXPOSURE VERIFICATION		
Malaria, amoebiasis, trypanosomiasis, dengue fever, yellow fever, pappataci fever, recurrent fever, plague, leishmaniasis, yaws, exanthematic typhus, borrelias and other rickettsiosis.	Any agent transmitted to humans by carriers	**Recommendations:** Investigate previous work in endemic areas and insect bites and other carriers. Keep in mind the latency and incubation periods of the disease's causative agent: Malaria (depends on species): 9 to 40 days. Amebiasis: 1 to 14 weeks. Rickettsiosis 5 to 7 days
Infectious and parasitic diseases not covered elsewhere: mycosis, legionella and helminthiasis.	Any agent transmitted to humans from various sources of infection	**Recommendations:** Investigate the history of exposure to possibly contaminated reservoirs, soils or water, bearing in mind the periods of latency and incubation of the disease's causative agent: Leptospiroris: 2-30 days Legionellosis: 2-10 days Pontiac Fever: 5-66 hours.

GROUP 4

OCCUPATIONAL DISEASES CAUSED BY INHALATION OF SUBSTANCES AND AGENTS NOT COVERED ELSEWHERE INDICATIVE REFERENCE TIMES FOR EXPOSURE VERIFICATION

NOTES:

TIMES SHOULD BE INTERPRETED AS INDICATIVE REFERENCES.

Times stated in the following publications have been used to create recommendations:

- Help Guide for the Evaluation of Occupational Diseases, first edition INSS-2017
- Guidelines for clinical decision making in occupational diseases, INSSBT- ISCIII.
- Fisterra Guides for Primary Care Physicians.
- Spanish Society for Pneumology and Thoracic Surgery Guide (SEPAR)

	AGENT	EXPOSURE REFERENCE
Silicosis	Free silica	**Recommendations:** Depending on the characteristics of evolution: Investigate a history of exposure to silica in the past 15 years. *Note: According to criteria from the Spanish Society for Pneumology and Thoracic Surgery (SEPAR), latency periods vary depending on the type of silicosis:* *Chronic silicosis: 10-15 years* *Accelerated silicosis: 5-10 years* *Acute silicosis: investigate recent prolonged exposure*
Coal workers' pneumoconiosis	Coal dust	**Recommendations:** Inquire about the history of exposure in the last 5 years.
Asbestosis **Fibrous conditions of the pleura and pericardium with respiratory or cardiac restriction caused by asbestos**	Asbestos	**Recommendations:** **In case of Asbestosis:** Inquire about the history of exposure to coal dust in the last 5 years. **In the case of pleural effusion:** Investigate a history of exposure to coal dust in the last 10 years

GROUP 4 OCCUPATIONAL DISEASES CAUSED BY INHALATION OF SUBSTANCES AND AGENTS NOT COVERED ELSEWHERE INDICATIVE REFERENCE TIMES FOR EXPOSURE VERIFICATION		
Talcosis, Silicocaolinosis and Kaolinosis and other silicatoses	Talc, kaolin, fuller's earth, bentonite, sepiolite, mica, other natural silicates	**Recommendations:** Investigate a history of exposure to silicate dust. *Note: For some silicate pneumoconiosis, an induction period of 2 years of exposure is given as a reference.*
Pneumoconiosis from hard metal or Widia steel	Sintered metals, high melting point metal carbide compounds and low melting point binder metals	**Recommendations:** **In acute respiratory manifestations:** Check recent exposure. **In cases of asthma:** Investigate continuous exposure in recent months **In Pneumoconiosis:** Investigate history of continuous exposure in the last 10 years. *Note: For asthma cases: the appearance of the disease, once sensitization occurs, may be immediate after exposure (immediate response) or appear hours after exposure has ceased (late response).*
Siderosis	Dust or fumes from iron metal and iron oxide	**Recommendations:** Investigate a history of continuous exposure to iron dust or fumes *Note: 3-10 year exposure periods leading to disease are referenced.*
Thomas slag (Tetracalcium phosphate)	Thomas slag (Tetracalcium phosphate)	**Recommendations:** **In acute respiratory manifestations:** Check recent exposure. **In Pneumoconiosis:** Investigate history of continuous exposure to slag.

GROUP 4 OCCUPATIONAL DISEASES CAUSED BY INHALATION OF SUBSTANCES AND AGENTS NOT COVERED ELSEWHERE INDICATIVE REFERENCE TIMES FOR EXPOSURE VERIFICATION		
Aluminium powder pneumoconiosis or aluminosis	Aluminium dust or fumes	**Recommendations:** In chronic respiratory disease: Investigate history of sustained exposure to metallic aluminium or aluminium oxides or silicates. *Note: Exposure periods of 10 years are required to cause disease.*
Rhino conjunctivitis and Asthma	High molecular weight substances (vegetable, animal, microorganism origin and enzymatic substances). Low molecular weight substances (metals and their salts, wood powders, pharmaceuticals, chemical-plastic, additives, etc.).	**Recommendations:** Investigate a history of exposure to sensitising agents in recent months. *Note: the sensitisation period may range from a few weeks to years; exceptionally it may be a few days. Once sensitisation occurs, the onset may be immediate or within hours of exposure.* *In case of asthma: The appearance of the disease, once sensitisation occurs, may be immediately after exposure (immediate response) or may appear hours after exposure has ceased (late response).*
Extrinsic allergic alveolitis (or hypersensitivity pneumonitis)	High molecular weight substances (vegetable, animal, microorganism origin and enzymatic substances). Low molecular weight substances (metals and their salts, wood powders, pharmaceuticals, chemical-plastic, additives, etc.).	**Recommendations:** **In acute respiratory manifestations:** Check recent exposure. **In chronic respiratory disease:** Investigate history of sustained exposure to fungi, animal proteins, chemical agents of low or high molecular weight.

GROUP 4 OCCUPATIONAL DISEASES CAUSED BY INHALATION OF SUBSTANCES AND AGENTS NOT COVERED ELSEWHERE INDICATIVE REFERENCE TIMES FOR EXPOSURE VERIFICATION		
Reactive airways dysfunction syndrome	High molecular weight substances (vegetable, animal, microorganism origin and enzymatic substances). Low molecular weight substances (metals and their salts, wood powders, pharmaceuticals, chemical-plastic, additives, etc.).	**Recommendations:** Investigate a history of exposure to respiratory irritants (gases, fumes, or vapours) in the past 12 hours.
Diffuse interstitial lung disease Diffuse interstitial fibrosis	High molecular weight substances (vegetable, animal, microorganism origin and enzymatic substances). Low molecular weight substances (metals and their salts, wood powders, pharmaceuticals, chemical-plastic, additives, etc.).	**Recommendations:** Investigate a history of exposure to organic or inorganic powders
Other diseases involving imprecise movement (byssinosis, cannabiosis, **yuterosis, linnosis, bagassosis, stipatosis, suberosis, etc.)**	Cotton, hemp, jute, bagasse, flax, esparto grass, cork, sisal powder	**Recommendations:** **In acute respiratory manifestations:** Check recent exposure. **In chronic respiratory disease:** Investigate history of exposure to the agent in the last 5 years. *Note: Exposure periods make reference to 10 years to cause chronic disease.*
Metal fume fever. **Polymer fume fever**	Metal fumes and low molecular weight substances	**Recommendations:** Check recent exposure to welding fumes from metals or polymers.
Antimony and its derivatives	Antimony	**Recommendations:** **Acute or irritative manifestations:** Check recent exposure to Antimony fumes. **Pneumoconiosis (stibiosis):** Investigate a history of exposure to Antimony.

GROUP 4 OCCUPATIONAL DISEASES CAUSED BY INHALATION OF SUBSTANCES AND AGENTS NOT COVERED ELSEWHERE INDICATIVE REFERENCE TIMES FOR EXPOSURE VERIFICATION		
Beryllium (Glucinium) and its compounds	Beryllium	**Recommendations:** **In manifestations of intoxication or acute respiratory disease (acute berylliosis):** Check recent exposure. **Allergic manifestations:** Investigate a history of exposure to the agent in the last 2 months **Pneumoconiosis:** History of continuous exposure of up to 30 years.

GROUP 5

OCCUPATIONAL SKIN DISEASES CAUSED BY SUBSTANCES AND AGENTS NOT INCLUDED IN SOME OF THE OTHER SECTIONS INDICATIVE REFERENCE TIMES FOR EXPOSURE VERIFICATION

NOTES:

TIMES SHOULD BE INTERPRETED AS INDICATIVE REFERENCES.

Times stated in the following publications have been used to create recommendations:

- Help Guide for the Evaluation of Occupational Diseases, first edition INSS-2017
- Guidelines for clinical decision making in occupational diseases, INSSBT- ISCIII.
- Fisterra Guides for Primary Care Physicians.

	AGENT	EXPOSURE REFERENCE
Irritant contact dermatitis	High molecular weight substances (vegetable, animal, microorganism origin and enzymatic substances). Low molecular weight substances (metals and their salts, wood powders, pharmaceuticals, chemical-plastic, additives, etc.).	**Recommendations:** Check recent exposure.
Allergic contact dermatitis	High molecular weight substances (vegetable, animal, microorganism origin and enzymatic substances). Low molecular weight substances (metals and their salts, wood powders, pharmaceuticals, chemical-plastic, additives, etc.).	**Recommendations:** **Allergic contact dermatitis** Investigate a history of exposure to the agent in recent weeks. *NOTE: Sensitisation to chemical agents requires a variable exposure period ranging from 15 days to 2 months.* *Once sensitisation occurs, the time of appearance of the skin symptomatology may take place in the first moments of exposure, although there are late skin responses 5 days after exposure.*
Photosensitisation and Photodermatitis	Exposure to solar radiation, contact with exogenous photosensitising substances, exposure to plants with psoralens: fig, celery, parsley, fennel, carrot, lavender, chamomile	**Recommendations:** Check recent exposure.

GROUP 5 OCCUPATIONAL SKIN DISEASES CAUSED BY SUBSTANCES AND AGENTS NOT INCLUDED IN SOME OF THE OTHER SECTIONS INDICATIVE REFERENCE TIMES FOR EXPOSURE VERIFICATION		
Occupational skin diseases caused by substances and agents not included in any of the other sections: **Infectious agents**	Pyodermitis (Staphylococcus and streptococcus); Anthrax (Bacillus anthracis); Scabies; Superficial professional fungal infections; Viral warts	**Recommendations:** **Pyodermitis (Staphylococcus and Streptococcus):** Investigate a history of exposure to possible sources of infection in the past few days or last two weeks. **Anthrax (Bacillus anthracis):** Investigate a history of exposure to possible sources of infection in the past two weeks. **Scabies:** Investigate a history of exposure to possible sources of infection in the past month. **Occupational superficial skin mycosis:** Investigate a history of exposure to possible sources of infection in the past month. **Viral warts:** Investigate a history of exposure to possible sources of infection in the past month.

GROUP 6

OCCUPATIONAL DISEASES CAUSED BY CARCINOGENIC AGENTS INDICATIVE REFERENCE TIMES FOR EXPOSURE VERIFICATION

NOTES:

TIMES SHOULD BE INTERPRETED AS INDICATIVE REFERENCES.

Times stated in the following publications have been used to create recommendations:

- Help Guide for the Evaluation of Occupational Diseases, first edition INSS-2017
- Guidelines for clinical decision making in occupational diseases, INSSBT- ISCIII.
- Fisterra Guides for Primary Care Physicians.
- Spanish Society for Pneumology and Thoracic Surgery Guide (SEPAR)

	AGENT	EXPOSURE REFERENCE
Malignant bronchial and lung neoplasm	Asbestos, Arsenic and its compounds, Beryllium, Bis-(chloromethyl) ether, Cadmium, Chromium VI and Chromium VI compounds, Nickel and Nickel compounds, Radon, Hydrocyanic Acid, Cyanides, Cyanogen and Acrylonitrile compounds, Free Silica	**Recommendations:** Investigate history of exposure to the agent over the past 15 years. *Note: In the case of broncho-pulmonary cancer due to exposure to Radon, this period is shortened to 5 years.*
Laryngeal cancer	Asbestos	**Recommendations:** Investigate the history of exposure to the agent over the past 15 years.
Pleural or peritoneal or other mesothelioma	Asbestos	**Recommendations:** Investigate the history of exposure to the agent in the last 20 years.
Malignant bladder neoplasm	Aromatic Amines, Amines and Hydrazines, Hydrocyanic Acid, Cyanides, Cyanogen and Acrylonitrile Compounds	**Recommendations:** Investigate the history of continuous exposure to the agent over the past 15 years.

GROUP 6 OCCUPATIONAL DISEASES CAUSED BY CARCINOGENIC AGENTS INDICATIVE REFERENCE TIMES FOR EXPOSURE VERIFICATION		
Skin cancer	Arsenic and its compounds, Polycyclic Aromatic Hydrocarbons (PAH), Ionizing Radiation	**Recommendations:** **Arsenic:** Investigate the history of exposure to the agent in the past 5 years. **Ionizing radiation:** Investigate the history of exposure to the agent in the past 10 years. **PAH:** Investigate the history of exposure to the agent in the last 20 years.
Angiosarcoma of the Liver and malignant neoplasm of the Liver and Intrahepatic bile ducts	Arsenic and its compounds, Vinyl Chloride Monomer, Hydrocyanic Acid, Cyanides, Cyanogen and Acrylonitrile compounds	**Recommendations:** Investigate history of exposure to the agent. **Vinyl Chloride Monomer:** Investigate the history of exposure to the agent in the last 20 years.
Lymph and myeloproliferative syndromes	Benzene, Ionizing Radiation, Nitrobenzene, Hydrocyanic Acid, Cyanides, Cyanogen Compounds and Acrylonitrile	**Recommendations:** Investigate the history of exposure to the agent in the past 5 years. **Ionizing radiation:** Investigate the history of exposure to the agent in the last 3 years.
Prostate cancer	Cadmium, Hydrocyanic Acid, Cyanides, Cyanogen and Acrylonitrile compounds	**Recommendations:** Investigate history of exposure to the agent.
Malignant neoplasm of the nasal cavity and paranasal sinuses	Chromium VI and Chromium VI compounds, Nickel and Nickel compounds, Hardwood powder	**Recommendations:** Investigate the history of exposure to the agent in the last 10 to 15 years.

ANNEX II: APPLICATION INSTRUCTIONS GENERAL DESCRIPTION OF THE PROCEDURE SECTIONS

This procedure states that the processes of investigation of occupational diseases must respond to an objective description of the circumstances of exposure, the development of the task and the organization of work and prevention.

At the same time, it seeks to enable reports issued to be concise and clear, focusing mainly on information on the causes of the disease and possible measures to prevent them. It is a question of reflecting the facts with descriptive and detailed criterion avoiding value judgments.

Section 1: Identification Data

This seeks to record the personal data of the affected person and the nominal data of the company, workplace, preventive and mutual modality, as well as the name or type of disease in accordance with the International Classification of Disease (ICD-9 Codes) or, as the case may be, the name or type of occupational disease in accordance with the specific regulation (*RD 1299/2006*).

Company and workplace data match the employee's current situation.

All information in this section must be properly tested to avoid errors.

Section 2: Medical-occupational interview with the affected person and description of the occupational disease

The development of this section entails the need to collect and manage health information, which requires the involvement of specialised personnel with appropriate ethical profiles.

The interview approach with the affected person, which involves a health complaint, directly concerns Occupational Medicine health professionals.

Its objective is to collect the information provided by the affected party. It consists of:

- A first section, consisting of the employee's work history and a questionnaire that collects minimum information on the work conditions of the individual and their lifestyle choices.

- A second section, opened to form a description of the disease process, according to the information provided by the affected individual.

- This is essentially a medical-professional history of the disease, with the distinctiveness of being directed to the establishment of a sequence and chronology of the appearance of the symptoms in relation to the: time, place and activity carried out by the employee. Key questions are: What symptoms does the worker have? When did they appear? Where did they appear? What activity does the worker attribute the symptoms? Are others affected?

Particular attention should be paid to the **probable duration of the latency period** of the disease, in order to subsequently collect exposure information in a timeframe appropriate to that period.

The information provided by the affected person will consist of his or her own account and medical documentation of his or her process. These reports will be reflected in the description of the process and incorporated as annexes to the final document of the investigation of said process.

- Health data is considered sensitive information and is in the group of information subject to the maximum level of preservation (art. 7 of the LOPD and art. 4 of its Regulations).
- It should be remembered that the Patient Rights Law, Law 41/2002, of 14 November, which regulates patient autonomy and rights and obligations regarding information and clinical documentation (BOE 15-11-2002) arts. 4 and 18 and their corresponding implementation in the autonomous communities: The patient has the right of access, with the reservations indicated in section 3 of this article, to the documentation of the clinical history and to obtain a copy of the data contained therein. The health centres will regulate the procedure that guarantees enforcement of these rights".
- The INSS Help Guide for the Assessment of OCCUPATIONAL DISEASES publication includes an estimate of latency periods for some diseases. This guide can be downloaded at: http://www.seg-social.es/Internet_1/LaSeguridadSocial/Publicaciones/Publicacionesporcon28156/Informacionsobrepen47075/G%C3%BAiaEEPP/index.htm

Section 3: Occupational risk prevention information

This section is intended to compile the approach used by prevention professionals.

Occupational risk prevention information to be provided by technical staff must correspond to current or previous exposure at a time related to the disease's theoretical latency period.

It will be based on the following points:

- On information obtained from the analysis of the company's occupational risk prevention documentation.

- On information and data obtained during the workplace visit and the development of ad hoc evaluations.

Since it is impossible to fully narrow down the situations that may occur, this section's structure is open.

Ergonomic and chemical risk charts are included to systematise information on the most prevalent exposures related to musculoskeletal and toxic damage.

It is left to the discretion of professionals to use other tables for this or use new tables for other risk types (noise, radiation, etc.) as there may be multiple options and situations.

The idea is to formulate a description of the exposure conditions that may lead to a conclusion about the need for a new assessment or a review of the existing assessment.

Section 4: Disease conclusions investigative procedure

Its function is to compile the authors' professional conclusions. Based on the results of the research they have carried out, experts formulate their considerations on the workplace conditions and the risk prevention characteristics of the disease under investigation.

Special care must be taken in its drafting as it will be a part of the procedure that can be quickly consulted without stopping to read other sections.

The conclusions, apart from being clear and precise, must be consistent with their preventive approach.

Conclusions or possible new working hypotheses should be formulated on the basis of objective research results. Value judgements should be avoided.

Section 5: Preventive and/or protective measures to be introduced in the workplace

It considers preventive actions to be carried out on the risks detected in that workplace or in others with similar work conditions in order to prevent the appearance of similar diseases. Preventive actions shall relate to the objectives of the procedure, list the measures to be taken and recommendations to be made, as well as the required deadlines and follow-up.

Based on the preventive deficiencies observed in the investigative procedure, necessary preventive actions are specified to the company and deadlines are set. Planning should be established by setting priorities based on the magnitude of the risk and the number of people exposed. The necessary material means and those responsible for their execution and control must be established. The company is responsible for the implementation of these actions.

The company must assume, directly and under its full responsibility, the execution and implementation of the preventive measures and actions proposed in the investigative report (*art 14 / points 1 and 2 Law 31/1995*).

Section 6: Minimum data set for the investigation of cases of occupational diseases

The collection and recording of this Minimum Data Set is intended to contribute to a better knowledge of collective health and the causes and prevention of occupational disease, based on evidence that provides experience of activity around the field research of cases.

The recording of this minimum data set will make it possible to:

- Identify opportunities for improving the identification and notification of occupational disease.
- Identify opportunities for improving prevention service research practices in occupational disease cases.

- Identify the determining causal facts of the disease. Contribute to preventive planning.

Section 7: Risk Tables

Ergonomic and chemical risk charts are included to systematise information on the most prevalent exposure related to musculoskeletal and toxic damage.

It is left to the discretion of the Healthcare Professional to use other tables for the same type of risks or for others (noise, radiation, etc.) as there may be multiple options and situations. Note: this is not a risk assessment.

Annexes

Any documentation, reports or studies which have been used in research shall be included as an annex.

Appendix: Integrated Investigation Process Algorithms

Different algorithms are included to summarise the procedure's application.

- Initiation of the Investigation Research algorithm.
- Data Collection Algorithm.
- Report Issuance Algorithm

ANNEX III: DATA COLLECTION DOCUMENT

Prevention service information

Name:			
Address:			Postcode:
Tel:		Email:	

Employee data

Surnames:	
Name:	
Company he/she belongs to:	

Disease and investigation information

Name of the Entity or Disease investigated:					
Nature of the Disease *(mark with x)*					
Occupational Disease:		Suspected Occupational Disease:		Work-related disease:	
Medical leave:	Yes		No		
Investigation start date:				____/____/____	
Name of person in charge of the investigation:					

Explanatory note (Cover sheet)

This page is the cover sheet. It contains the basic data identifying the file contents.

INDEX

1. IDENTIFICATION DATA

2. MEDICAL-OCCUPATIONAL INTERVIEW WITH THE AFFECTED PERSON AND DESCRIPTION OF THE DISEASE

3. PREVENTIVE-LABOUR INFORMATION

4. CONCLUSIONS TO THE DISEASE INVESTIGATION PROCEDURE

5. PREVENTIVE AND/OR PROTECTIVE MEASURES TO BE INTRODUCED IN THE WORKPLACE

6. ANNEXES

Explanatory note to the Index

- This is a general index, in which only the main sections of the report are included.
- The index should include the page number where each point and section begins, to facilitate searching various parts of the report.

1. IDENTIFICATION INFORMATION

1.1. Affected Worker Information

Physical Person Identifier (IPF):							
1º Surname:				2º Surname:			
Name:				Date of birth:	____/_____/_____		
Sex:	Male		Female				
Home Address							
Street:		Nº:		Flat/ Door:		Postcode:	
Municipality:		City:					
Landline:		Mobile:					
Job Title:							
Occupation (CON-94): *(4 digit code)*							
Contract Type: *(code according to CEPROSS)*							

1.2. Disease Identification

Disease investigated:		Code: CIE- 10			
Nature of the Disease (*mark with x*)					
Occupational Disease:		Suspected Occupational Disease :		Work-related disease:	
CEPROSS Code (if applicable):					
Medical leave:	Yes		No		
Investigation start date:	____/_____/_____				
Name of person in charge of the investigation:					

1.3. Company Information

Company name:							
Economic Activity : (CNAE- 2009)					VAT Number [CIF]		
Number of employees:				Social Security Scheme:			
This is a TTE:	Yes		No				
Address							
Street:		N°:		Flat /door:		Postcode:	
Municipality:		City:					
Landline:		Mobile:					

1.4. Insurance or Management Entity Information

Name:						
N°:						
Address						
Street:		N°:		Flat/door:		Postcode:
Municipality:		City:				
Landline:		Mobile:				

1.5. Information Collected

(Documentation accompanying the report, mark with X)

Copy of the occupational disease report (if applicable)	
Workplace risk assessment	
Preventive workplace planning	
Health monitoring record	
Medical - occupational interview with the affected employee	
OTHERS (specify):	

Note on item 1. IDENTIFICATION DATA

- All fields in this section are mandatory.
- Particular care should be taken when completing personal details by cross- checking them against the necessary documents (National Identity Card [DNI], Tax ID Number [NIF], etc.).
- As a prerequisite to the implementation of the procedure, the Prevention Delegates must be personally summoned and informed of the action to be carried out, as well as of their right to consultation and participation in the procedure, making the observations they consider appropriate, in accordance with the provisions of art. 18 and chapter V of the LPRL, on consultation and participation of employees.

Note on item 1.5. Information collected

- Minimum information to be collected for research.

2. MEDICAL-OCCUPATIONAL INTERVIEW

2.1. Description of the current disease process

Note on item 2.1. DESCRIPTION OF THE CURRENT DISEASE PROCESS

The description of the disease process should:

- Reflect the clinical evolution in a highly descriptive, concise, clear, chronological and sequential manner.
- Be drafted in such a way that readers can clearly understand it fully. Avoid using acronyms.
- Reference medical reports or clinical documentation provided by the person concerned, e.g. results of: imaging study, neurophysiological study, allergic tests, etc.; a copy of these reports shall be attached as a documentary annex to the investigation.
- In addition to the process description additional basic information to be included is:
  - Diagnosis date
  - Medical leave duration
  - Disease detected by:
    - Family Physician or Public Health Service Specialist
    - Prevention Service Physician
    - Insurance Company Physician
    - Others

Reflect received medical treatments:

- Medical: medication, immobilisations, infiltrations.
- Surgical: arthroscopy, prosthesis, grafts, etc.
- Rehabilitation: type and duration

Clearance received: for improvement, for cure, with sequelae, with individual restrictions of an individual or work-related nature.

Reflect how the process has ended, for example:

- Not finished: still on medical leave.
- Reinstated to the same post: when he/she is reinstated to the same post with the same tasks with no preventive measures having been introduced.
- Reinstated to the same re-adapted post: when he/she is reinstated to the same post with the introduction of preventive measures.
- Transfer to a risk-free post.
- Termination of the contract, the temporary contract is not renewed due to the OD.
- Dismissal due to OD.

INSS classification (if any)

- Cured with no sequelae.
- Non-Invalidating Injury
- Disability or proposed Total Permanent Disability.
- Disability or proposed Absolute Permanent Disability.
- Severe Disability or proposed Severe Disability.
- Widow's or Widower's Pension.

Point 2.1 requires the exclusivity of the experience and ethical requirements of an occupational physician.

Information sources:

- Employee interview.
- Occupational Disease Report.
- Discharge report
- INSS summarised report (if applicable).
- Health monitoring record.
- Other medical information that the employee can provide: medical records, prescriptions, etc., will be incorporated as annexes to this section.

*** Consideration should be given to the provisions of the Law on Patient Autonomy and Rights and Obligations regarding Clinical Information and Documentation, Law 41/2002, of 14 November, and Organic Law 15/1999 of 13 December, on the Protection of Personal Data and complementary legislation.*

2.2. Existence of other cases at the company

Note on item 2.2. EXISTENCE OF OTHER PREVIOUS CASES AT THE COMPANY

Investigate the possible existence of other cases at the company. It is a question of ascertaining the existence, either at present or retrospectively, of cases of similar diseases at the company.

The estimated timeframe shall depend on the latency period of the disease in question.

If there are other cases, indicate whether or not they have been officially declared. (Remember: any case that had not previously been declared must be reported to the INSS.)

Information sources:

- Employee interview.
- Company claims data.
- Health monitoring record.
- Work absence data.
- Information collected from the Prevention Delegates.
- Interview workers or co-workers involved in the same or similar workplaces or carry out similar tasks.
- Information may be obtained from the Insurance Company, Labour Inspectorate, etc.

2.3. History of diseases of interest

Note on item 2.3. DISEASES OF INTEREST BACKGROUND

Particular attention must be paid to the disease processes that may have previously impacted the organ or organs affected by the disease. For example, previous injuries for musculoskeletal diseases; previous pulmonary diseases for lung disease; previous otopathies for deafness, etc.

Information sources:

- Employee interview.
- Health monitoring record.
- Other medical information that the employee can provide: medical records, prescriptions, etc.

2.4. Employment history

Time in hazardous job post	No. years: [__] [__]	No. months: [__] [__]
Working hours	Hours of work/day [__] [__]	Hours/week: [__] [__]

Note on item 2.4. EMPLOYMENT HISTORY

Describe current or previous occupations and their duration, noting exposures occurred. Please be descriptive, note information in chronological order and be concise.

Question the worker on previous occupations with detailed description of occupations, risks, duration of exposure and preventive measures. Inquire about, and if possible, document previous tasks. Review the employee's health monitoring record.

Information sources:

- Employee interview.
- Health Monitoring Record.
- Risk Assessment Record.

2.5. Personal habits

Current smoker	No. cigarettes/day [__] [__]		Years of smoking: [__] [__]
Ex-smoker	Months [__] [__]		Years: [__] [__]
Alcohol Consumption (mark with x)			
Does not consume alcohol		Occasional consumption	
Regular consumption		Consumption habit	
Man: Moderate: < 40 g/day or 280 g/week, Alto: > 40 g/day or 280 g/week Woman: Moderate: < 24 g/day or 168 g/week, Alto: > 24 g/day or 168 g/week Equivalences: Standard Drink: • 1 SD= 10 g (1 glass of wine/1 beer/1 Irish coffee/1 shot). • 2 SD= 20 g (1 whisky/1 mixed drink/1 glass of cognac/1 cocktail)			
Name of medication			Daily dose in mg
OBSERVATIONS ON PERSONAL HABITS:			

Note on item 2.5. PERSONAL HABITS

These are basic sections of medical-occupational information.

This type of data is relevant from the point of view that it can affect certain types of pathologies, such as those related to toxic agents or inhalation risks. It is structured as a questionnaire in order to have reference criteria and standardise information.

- Tobacco consumption: This information should be recorded as accurately as possible. Particularly relevant to occupational inhalation risks.
- Alcohol: Apply equivalents.
- Medication: Of particular importance in cases of possible synergies or addition of effects. The aim is to reflect the consumption of medicines that are needed on a continuous basis or that are consumed over long periods of time.

In observations, reflect possible influence between the drug and the development of the disease (if applicable).

Information sources:

- Worker interview.
- Health monitoring record.
- Other medical information that the employee is able to provide: medical records, prescriptions, etc.

2.6. Medical-occupational conclusiones of the interview

Note on item 2.6. CONCLUSIONS FRON THE MEDICAL-OCCUPATIONAL INTERVIEW

This section will summarise results of the medical-occupational interview, using relative formulations, but which are clear and understandable.

Examples:

(...) Existing medical evidence indicates the existence of an injury compatible with...

(...) It is observed that the image diagnosis reflects results compatible with...

(...) It is observed that a compatible disorder is detected in Electromyography...

(...) It is observed that in audiometry results are compatible with hearing loss due to noise...

(...) Employment history in job post with a history of exposure to asbestos dust. Respiratory alterations presented by imaging tests are compatible with occupational disease.

(...) Due to worker employment history in a job that requires forced postures and repetitive shoulder efforts, tendinitis of the supraspinatus from which it had to be surgically intervened can be considered work-related....

3. WORK CONDITIONS AND OCCUPATIONAL RISK PREVENTION INFORMATION

3.1. Description of the company's economic activity

3.2. Description of work conditions and occupational workplace risks related to the investigated disease (activity description and work/exposure per day)

Activity performed	
Machinery and tools used	
Products and materials used	
Organisational Characteristics	

Note on items 3.1 and 3.2

This section constitutes the technical-preventive point of view and will be completed by prevention professionals, according to their criteria and based on information resulting from the investigation.

In order to complete this section, the investigated disease's latency period must be considered.

Information shall be collected on workplaces or tasks that are epidemiologically suspected to have a causal relationship according to the disease's natural history.

Note on item 3.1 DESCRIPTION OF THE COMPANY'S ECONOMIC ACTIVITY

Kind of business or establishment and description of the physical environment (office, workshop, outdoor activity, construction site, etc.) Description in brief of the main characteristics of the workplace and the activity: tasks, production, raw and finished materials, processes, etc.

Sources of information:

- Risk assessment. Description of economic activity.
- Demand information from the company.
- Information collected from the technicians or company managers.
- Information collected from the Prevention Delegates.

Note on item 3.2 DESCRIPTION OF WORKING AND RISK CONDITIONS OF THE JOB POST FOR THE DISEASE UNDER INVESTIGATION

The direct visit to the workplace, which forms the basis of this part of the investigation. Its purpose is to verify the circumstances and specific work conditions and to verify preventive measures.

- Checking exposure and preventive measures
- The task(s) or activity(ies) regularly undertaken by the employee.
- Extraordinary task(s) or activity(ies) undertaken by the employee.
- Processes, equipment, materials and/or substances used.
- Existing collective and individual protective measures.
- Concurrent facts with the case onset: innovation processes, new materials, incidents, maintenance operations, unusual operations in the workplace, deviations from normality, etc.

Each group of occupational diseases has its own specific characteristics. (*See Annex VII*).

In summary, the following points should be covered:

- **Description of the activity:** description of actions carried out indicates the different requirements of the task.
- **Machinery and tools used:** specifying the machinery and tools used will enable information to be obtained on risks arising therefrom.
- **Products and materials used:** specifying the products and materials used will provide information on chemical risks. Attention must be paid to the kind of product and the way in which it is used.
- **Organisational characteristics:** describe if he/she is working in a team or alone, hierarchical relationships, if there are customer facing activities, etc.

Example: construction worker

Description of the activity: *The activity consists of: transporting materials, loads and heavy equipment (bricks, blocks, tools, etc.), carrying out demolition work, masonry works (formwork and removal of formwork, erection of partitions, spraying of concrete, and cement preparation). Clean, maintain and store equipment.*

Machines and tools used: *hand tools (pallets, shovels, hammers, pickaxes, etc..); power tools (pneumatic drill, saw sanders, radial, pneumatic hammer, riveting machine, etc.). Operation of small cranes and lifts.*

Products and materials used: *concrete products, cement, glue, epoxy resins, clay, lime, plaster, paint, release agents. Materials: concrete formwork, concrete blocks, bricks, stones, tiles, slabs, etc.*

Organisational characteristics: *teamwork or individual work.*

The description of the activity can be summarised in a table:

Job tasks	**Dedication as a fraction (%) of the workday***		
	>75%	*75>25%*	*>25%*
1			
2			
3			
(…)			

**percentage of approximate time spent on the task*

- *In the case of specific risks, such as ergonomic or chemical risks, the corresponding tables can be used for risk analysis (guides can be found at the end of the guide).*
- *According to their professional criteria and experience, each healthcare provider can use the questionnaires or guides they consider suitable*

Concrete facts and objectives should be reflected; no interpretations or value judgements should be made.

Information sources:

- Risk assessment. Description of the risks of the post.
- Request information from the company.
- Information collected from technicians, supervisors or those in charge of the company.
- Information collected from the Prevention Delegates.
- Interview workers or co-workers involved in the same or similar workplaces or carry out similar tasks.

3.3. Collective protective measures

Note on item 3.3 Collective protective measures
This point should reflect the current protective measures:

- Premises and circulation routes: cleanliness, hygiene, maintenance, etc.
- Production: ventilation, localised aspirations, insulation, etc.
- Organisation of work: planning, breaks, rotations, etc.
- Work conditions: thermal environment, light, sound, etc.

It should be specified whether there is a maintenance programme for collective protective measures and whether or not it is carried out rigorously.

Information sources:

- Risk assessment.
- Description of collective protective measures.
- Request information from the company: technical data, design and technical characteristics.
- Maintenance programme and documentation of follow-up and incidents.
- Information collected from technicians, supervisors or those in charge of the company.
- Information collected from Prevention Delegates.
- Information collected from employee(s) occupying that or similar post about collective protective measures in that job (operation, instructions, maintenance...).
- Any specific circumstance, when necessary, can be described in detail in the observation item.

3.4. Personal protective equipment used

Observations:

Note on item 3.4 PERSONAL PROTECTIVE EQUIPMENT (PPE)

Note whether conditions and circumstances of use are specified. Storage conditions, cleanliness and regular spare parts should be observed. Also specify whether PPE suitability is included in health monitoring procedures.

Observations: Other personal protective measures may be described as well. This includes special equipment or whether there is a health criterion for exposure restriction due to a transitory health state, medical prescription or a condition of special sensitivity to an occupational risk.

Information sources:

- Risk assessment.
- PPE description.
- Request information from the company: data and technical characteristics. Instructions for use, review programs and documentation of use and incidents.
- Information collected from technicians, supervisors or those in charge of the company.
- Information collected from Prevention Delegates.
- Interview workers or co-workers involved in the same or similar workplaces or who carry out similar tasks.

3.5. Preventive management

3.5.1 Hazardous tasks evaluation for the investigated disease

Is there a workplace risk assessment?:	Yes		No	
Was the risk of occupational disease identified?:	Yes		No	
Observations:				

3.5.2 Were preventive or corrective measures planned?

Yes		No		
If so, what measures were planned?				

3.5.3 Had the measures planned been implemented?

Yes		No		Parcialmente		
In case of partial implementation, specify the measures carried out:						

3.5.4 Other information of occupational risk prevention related to the investigated workplace

Note on item 3.5

This item should be regarded as a general review of the company's preventive management. More than specific aspects, it is a question of compiling general aspects that show the characteristics of the company's preventive activity.

3.5.1: The workplace risk assessment should be checked and verified and it should be reported whether there is evidence of an occupational disease risk, whether the causal risk was or was not detected

Documentation shall be attached as an annex to the investigative report along with a copy of the occupational risk evaluation data relating to the affected worker's workplace.

3.5.2: If the job has been evaluated, it must be stated whether preventive measures or measures aimed at eliminating and/or minimising and controlling the risk were planned and, if so, whether they were indeed carried out or to what extent they were carried out.

3.5.3: Attach a copy of the preventive planning relating to the workplace of the affected worker as an annex to the investigative report.

3.5.4: Additional work risk prevention information related to the investigated workplace: if any additional work risk prevention information arises in the course of the investigation should be noted under this item:

Example: *We are investigating an occupational disease due to an ergonomic condition and in the course of the investigation a chemical risk or a risk due to noise exposure is detected.*

Information sources:

- Risk assessment
- Prevention planning
- Health monitoring record
- Information on work accidents and occupational diseases notification
- Data on sick leave
- Information collected from Prevention Delegates.
- Interview workers or co-workers involved in the same or similar workplaces or carry out similar tasks.

4. CONCLUSIONS

Note on Conclusions

The aim is to formulate work risk prevention conclusions based on the results of the investigation carried out. The author(s) give their opinion on the relationship between work conditions and the investigated disease

Special care must be taken in its drafting as it will be the part of the procedure that many readers will turn to without stopping at the other reported sections.

Conclusions:

- Must meet the investigative aims.
- Must show the relationships between the observed facts and the investigated disease and also warn about possible limitations of the results, whether they are of a scientific nature or due to difficulties in collecting sufficient and contrasted information.
- Must look at the evidence from the point of view of work risk prevention knowledge.
- Must express their adjustment to the socio-labour prevention framework.

In addition to being clear and precise, conclusions must be consistent with an exclusive focus on preventive purposes. Conclusions should take into account possible repercussions at prevention and labour levels on companies and workers.

In this section, authors may formulate any evidence that they consider appropriate and that can clarify any possible relationship of occupational risks with the investigated disease.

When considering preventive measures, exposure to an occupational risk (over a period of time in accordance with the disease's natural history) and the onset of any disease related to that exposure should be interpreted as a hypothetical degree of occupational risk-disease relationship.

Care must be taken in drafting this section to reflect facts in the form of considerations around the disease's onset. Remember that this point will be read by third parties who have not been involved in the investigation.

Examples:

(...) Repetitive movements and efforts in tasks performed are observed.
(...) Exposure to chemical substances with indication of _____ danger is observed.
(...) Exposure to respiratory sensitising substances and products is observed.
(...) Contact with dermal sensitising products and substances is observed.
(...) Exposure to dust (silica, asbestos, etc.) is observed.
(...) Exposure to noise is observed.
(...) Exposure times are approximately 9-10 hour/day, which indicate increased risk exposure.
(...) Collective protective equipment only works on a one-off basis and is not properly maintained, which increases risk.
(...) Risk prevention regulations must be observed for agents (e.g. carcinogens, biologics, radiation, chemical agents, etc.).

5. PREVENTIVE AND/OR PROTECTIVE MEASURES TO BE INTRODUCED IN THE WORKPLACE

Prevention at source		
Execution deadline	N° of days [__] [__]	N° of months [__] [__]
Summarised description of measure		
Collective protective equipment		
Execution deadline	N° of days [__] [__]	N° of months [__] [__]
Summarised description of measure		
Personal protective equipment		
Execution deadline	N° of days [__] [__]	N° of months [__] [__]
Summarised description of measure		
Workplace Organisation		
Execution deadline	N° of days [__] [__]	N° of months [__] [__]
Summarised description of measure		
Specific work risks evaluation (or review)		
Execution deadline	N° of days [__] [__]	N° of months [__] [__]
Summarised description of measure		
Specific health monitoring		
Execution deadline	N° of days [__] [__]	N° of months [__] [__]
Summarised description of measure		
Training / Information		
Execution deadline	N° of days [__] [__]	N° of months [__] [__]
Summarised description of measure		
Other measures		
Execution deadline	N° of days [__] [__]	N° of months [__] [__]
Summarised description of measure		

Notes on item 5

It considers preventive actions to be taken to eliminate occupational risks detected in the workplace or in other locations with similar work conditions in order to prevent the onset of new cases or to minimise the likelihood of occurrence.

They should be closely related to the investigation's aims and will contain measures to be carried out and recommendations to be considered, as well as deadlines for implementing follow-up.

Experts involved will analyse the investigation's results and subsequently note preventive measures to be implemented.

This task shall be developed in a working team, which after the investigative results discussion, will formulate preventive measures considered appropriate.

Only measures deemed necessary to prevent new cases shall be indicated, either by eliminating the risk or minimising and controlling it. Measures must be drafted as clearly as possible.

Proposed preventive measures must be consistent with the disease causes reflected in the investigation and must be targeted to act on the origin of the risk.

They will only concern the workplace affected or similar workplaces at the company.

If any of the indicated measure were already included in the preventive activities plan as a result of work risks assessment, it shall be noted.

Deadlines for implementation of measures are as follows:

- Immediate: Carrying out the task must be ceased until recommended preventive measures are implemented
- Very urgent: 15 days
- Urgent: 1 month
- Somewhat urgent: 3 months
- Normal: 6 months

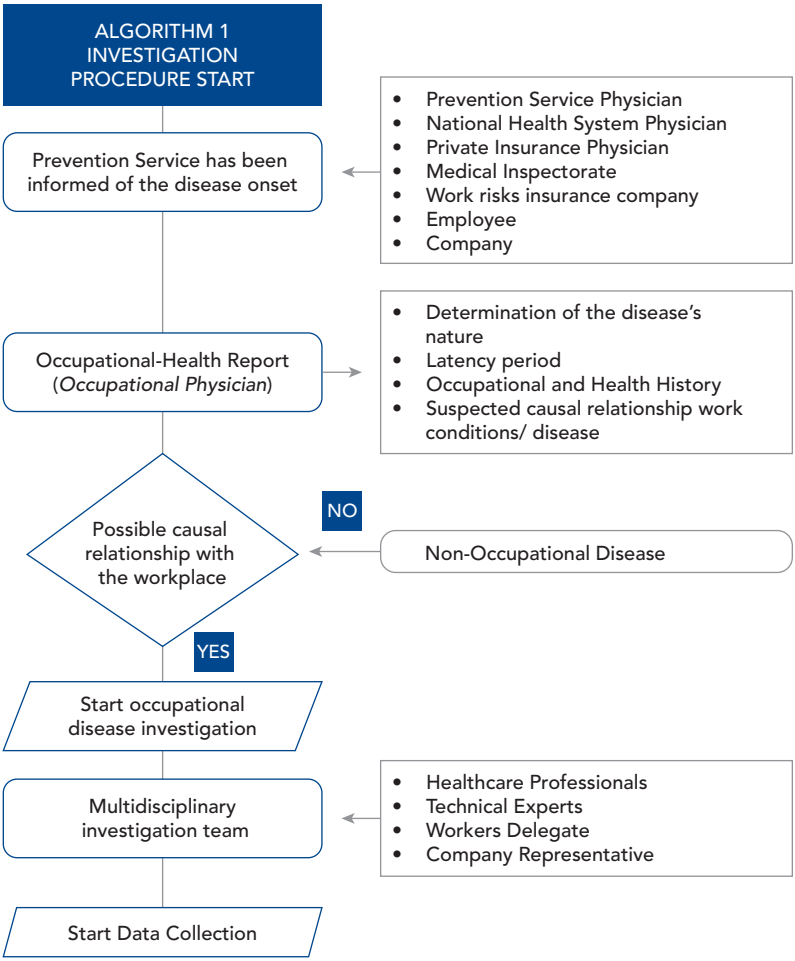
It must be remembered that:

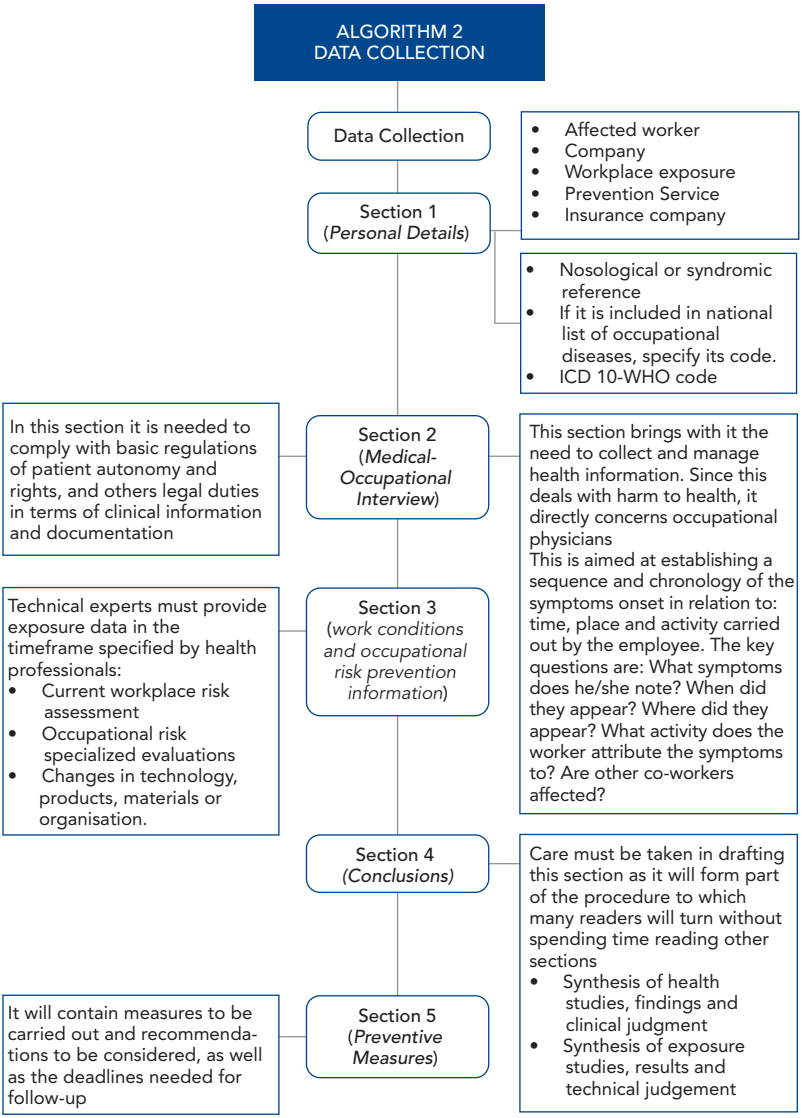
- The employer is responsible for ordering the investigation of all incidents that cause harm to workers health or where the health monitoring programmes detect any indications that the current preventive measures are insufficient.
- The company must assume, directly and under its full responsibility, the execution and implementation of preventive measures and actions proposed by the investigative report.

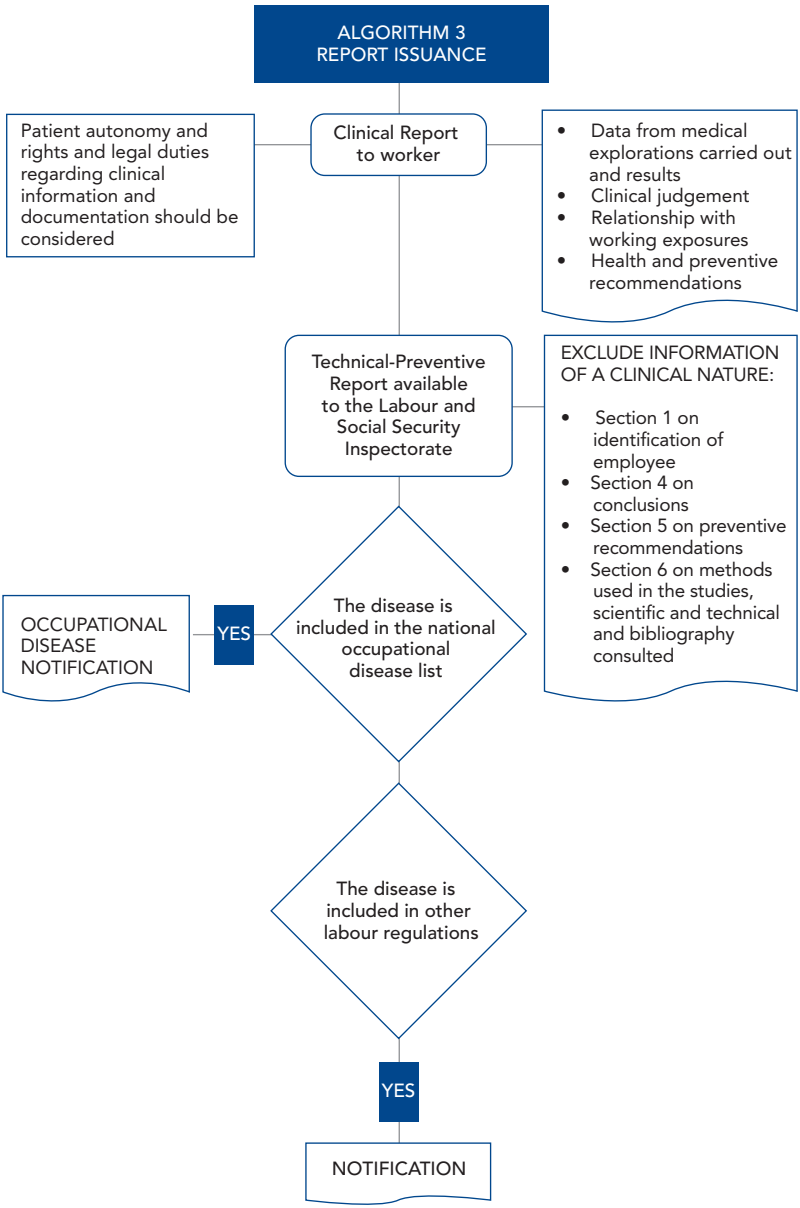
6. MINIMUM DATA SET (ANNEX V)

Once the investigation is finished, the Minimum Data Set in Annex V shall be completed as well, for the purposes of a Collective Health Monitoring Programme, in which the occupational disease causes identified by the investigation shall be codified in accordance with Annex VI.

ANNEX IV: PROCEDURE ALGORITHMS


ALGORITHM 1
INVESTIGATION
PROCEDURE START
Prevention Service has been informed of the disease onset
Prevention Service Physician
National Health System Physician
Private Insurance Physician
Medical Inspectorate
Work risks insurance company
Employee
Company
Occupational-Health Report (Occupational Physician)
Determination of the disease's nature
Latency period
Occupational and Health History
Suspected causal relationship work conditions/ disease
Possible causal relationship with the workplace
NO
Non-Occupational Disease
YES
Start occupational disease investigation
Multidisciplinary investigation team
Healthcare Professionals
Technical Experts
Workers Delegate
Company Representative
Start Data Collection


ALGORITHM 2
DATA COLLECTION
Data Collection
Section 1
(Personal Details)
Affected worker
Company
Workplace exposure
Prevention Service
Insurance company
Nosological or syndromic reference
If it is included in national list of occupational diseases, specify its code.
ICD 10-WHO code
Section 2
(Medical-Occupational Interview)
In this section it is needed to comply with basic regulations of patient autonomy and rights, and others legal duties in terms of clinical information and documentation
This section brings with it the need to collect and manage health information. Since this deals with harm to health, it directly concerns occupational physicians
This is aimed at establishing a sequence and chronology of the symptoms onset in relation to: time, place and activity carried out by the employee. The key questions are: What symptoms does he/she note? When did they appear? Where did they appear? What activity does the worker attribute the symptoms to? Are other co-workers affected?
Section 3
(work conditions and occupational risk prevention information)
Technical experts must provide exposure data in the timeframe specified by health professionals:
Current workplace risk assessment
Occupational risk specialized evaluations
Changes in technology, products, materials or organisation.
Section 4
(Conclusions)
Care must be taken in drafting this section as it will form part of the procedure to which many readers will turn without spending time reading other sections
Synthesis of health studies, findings and clinical judgment
Synthesis of exposure studies, results and technical judgement
Section 5
(Preventive Measures)
It will contain measures to be carried out and recommendations to be considered, as well as the deadlines needed for follow-up


ALGORITHM 3
REPORT ISSUANCE
Clinical Report to worker
Patient autonomy and rights and legal duties regarding clinical information and documentation should be considered
Data from medical explorations carried out and results
Clinical judgement
Relationship with working exposures
Health and preventive recommendations
Technical-Preventive Report available to the Labour and Social Security Inspectorate
EXCLUDE INFORMATION OF A CLINICAL NATURE:
Section 1 on identification of employee
Section 4 on conclusions
Section 5 on preventive recommendations
Section 6 on methods used in the studies, scientific and technical and bibliography consulted
The disease is included in the national occupational disease list
YES
OCCUPATIONAL DISEASE NOTIFICATION
The disease is included in other labour regulations
YES
NOTIFICATION

ANNEX V: HARMONISED DATA SET FOR COLLECTIVE HEALTH MONITORING

1. CASE IDENTIFICATION IN THE OCCUPATIONAL DISEASE REGISTER (ODR)											
IDENTITY CARD											
1.1. ODR Process Code											
1.2. ODR Report Code											

2. DISEASE AND NOTIFICATION DATA											
2.1. Occupational disease (OD) notification data form											
2.1.1. National OD list code (6 digits)											
2.1.2. First diagnostic (ICD10- WHO code 4 digits)											
2.1.3. Notification date (day/month/year)											
2.1.4. Number of previous OD notification with the same diagnosis											
2.2. After the Investigation (only if investigation shows a discrepancy with the notification data)											
2.2.1. National OD list code after investigation (6 digits)											
2.2.2. ICD10- WHO after investigation (4 digits)											
2.2.3. Start of investigation date (dd/mm/yy)											

3. CURRENT EPISODE DATA											
3.1. Number of previous episodes with similar symptomatology (regardless of whether a notification report was generated).											
3.2. For current episode: Time noted by the worker from symptoms onset to OD notification date (in days)											
3.3. For current episode: physician to whom the employee first sought assistance for symptoms presented (check only one option): 1. Public Health System Family Physician 2. Public Health System Specialist doctor at hospital 3. Private medical company general practitioner or specialist 4. Occupational Risk Prevention Service Physician 5. Insurance company physician or compensation 6. Other practitioners 9. Unknown											
3.4. For the current episode: note the first diagnosis (ICD10- WHO)											

3.5. For the current episode: physician who established the suspicion of occupational disease (check only one option): 1. Public Health System Family Physician 2. Public Health System Specialist doctor at hospital 3. Private medical company general practitioner or specialist 4. Occupational risk Prevention Service Physician 5. Insurance company physician or compensation 6. Other practitioners 9. Unknown
3.6. For the current episode: Medical act in which a suspected occupational disease was established (check only one option): 1. Medical examination at work 2. After consultation for another health concern
3.7. Was the physician from the Occupational risk Prevention Service aware of the occupational disease case?

4. EMPLOYEE HEALTH DATA			
4.1. Sex			
4.2. Date of Birth (dd/mm/yy)			
4.3. Last health exam (dd/mm/yy)			
4.4. Work- aptitude medical judgement of the last health exam (check only one option): 1. Fit for work 2. Fit for work with some restrictions or limitations 3. Unfit for work 4. Pending evaluation 9. Unknown			
4.5. In the case of "Fit for work with some restrictions or limitations" or "Unfit for work". Does this score affect the task or activity potentially related to the investigated disease? 1. Yes 2. No 9. Unknown			
4.6. Previous diagnoses detected a "*sensitive worker*" health status to working exposure potentially related to the investigative disease 1. Yes 2. No 9. Unknown			

5. IN CASE OF OTHER COWORKERS WITH SIMILAR SYMPTOMS (even without OD notification)		
5.1. No. of workers with symptoms compatible with the OD notified		
5.2. What is the common working exposure between affected workers? (check only one option): 1. They perform the same task within the working process 2. They perform different tasks but use similar equipment, machines or products 3. They perform different tasks and use different equipment, machines or products, except raw materials 4. They do not have common exposure due to the working process or tasks developed, but their work areas are located in the same company location		
5.3. Briefly specify what common exposure has been identified among the affected workers		

6. DATA CONCERNING OCCUPATIONAL EXPOSURE TO CHEMICAL AGENTS							
6.1. Has exposure at the time the disease was notified been the cause of the disease notified?							
6.1.1. Time working in the development of current tasks (check with 0 if under 1 month)							
6.1.2. Agent potentially causing the occupational disease. 00. Agent was not identified X….X. CAS Number							
6.1.3. 6.1.3. Environmental assessment results (express unit of measure) 00. No environmental assessment was carried out							
6.1.4. Biological control results (express biological marker and units) 00. No biological controls were carried out							
6.1.5. If the agent has not been identified, specify the product or mixture potentially causing the occupational disease.							
6.2. If the current occupational exposure was NOT the cause of the reported disease:							
6.2.1. Does the professional history show a past working exposure causally related to the reported disease?							
6.2.2. 6.2.2. Identification of the agent (to which the worker was exposed), potentially causing the occupational disease. 0.0 The agent was not identified X….X. CAS Number							
6.2.3. If the agent has not been identified, specify the product or mixture potentially causing the occupational disease.							

7. DATA CONCERNING OCCUPATIONAL EXPOSURE TO PHYSICAL AGENTS	
7.1. Was the exposure due to the tasks performed at the disease notification time the cause of the reported disease?	
7.1.1. Time in months, carrying out current tasks (indicate 0 if under 1 month)	
7.1.2. Agent potentially causing the occupational disease. 1. Noise 2. Vibrations 3. Atmospheric Pressure 4. Ia. Alpha Radiation 5. Ib. Beta Radiation 6. Ic. Gamma Radiation 7. Id. Rx 8. UV Radiation 9. Radiant Energy	
7.1.3. Environmental exposure value or dosimetry (express unit of measure 00. No environmental measurements or dosimetries were performed	
7.2. If the current exposure was NOT the cause of the reported disease:	
7.2.1. Does the professional history show a past working exposure causally related to the reported disease?	
7.2.2. Identification of the agent potentially causing the occupational disease (check only one option): 1. Noise 2. Vibrations 3. Atmospheric Pressure 4. Ia. Alpha Radiation 5. Ib. Beta Radiation 6. Ic. Gamma Radiation 7. Id. Rx 8. UV Radiation 9. Radiant Energy	

8. DATA CONCERNING OCCUPATIONAL EXPOSURE TO ERGONOMICS FACTORS	
8.1. Was the exposure due to the tasks performed at the disease notification time the cause of the reported disease?	
8.1.1. Time, in months carrying out current tasks (indicate 0 if under 1 month)	
8.1.2. Ergonomic condition potentially causing the occupational disease (multiple choice): 1. Physical overload (handling loads) 2. Maintenance of painful postures 3. Performing repeated movements 4. Static postures maintenance 5. Force or pressure application	
8.1.3. Ergonomic evaluation of the activities performed (express the evaluation method and its results) 00. No ergonomic assessments were carried out.	
8.2. If the current exposure was NOT the cause of the reported disease:	
8.2.1. Does the professional history show a past working exposure causally related to the reported disease?	
8.2.2. Identification of the ergonomic condition potentially causing the occupational disease (multiple choice): 1. Physical overload (manual handling of loads) 2. Maintenance of forced postures 3. Performing repeated movements 4. Maintenance of unforced but static postures 5. Application of force or pressure	

9. DATA CONCERNING OCCUPATIONAL EXPOSURE TO BIOLOGICAL AGENTS			
9.1. Was the exposure due to the tasks performed at the disease notification time the cause of the reported disease?			
9.1.1. Time in months, carrying out current tasks (indicate 0 if under 1 month)			
9.1.2. Identify the biological agent potentially causing the disease. (See Annex DIRECTIVE 2000/54/EC) 0.0 No agent identified			
9.2. If the current exposure was NOT the cause of the reported disease:			
9.2.1. Does the professional history show a past working exposure causally related to the reported disease?			
9.2.2. Identify the biological agent potentially causing the disease (See Annex DIRECTIVE 2000/54/EC). 0.0 No agent identified			

10. DATA FROM THE DISEASE INVESTIGATION PRIOR TO THE LABOUR AUTHORITY'S INVOLVEMENT	
10.1. Is there a report documenting that there was an investigation prior to the labour authority's involvement?	
10.2. ONLY if 'yes' to the previous question	
10.2.1. The investigation was conducted by: 1. A designated employee 2. Company Prevention Service 3. External Prevention Service 4. Insurance company 5. Others	
10.2.2. Investigation date	
10.2.3. The investigation has been carried out in accordance with a standardised investigative procedure	
10.2.4. The report concludes that there is a link between work conditions and the occupational disease.	
10.2.5. The report specifies preventive measures aimed at the investigated disease	
10.2.6. The report advises a Plan including preventive measures to be implemented	

11. FACTS AND CAUSES RELATED TO THE INVESTIGATED DISEASE. (Note: For each group, add all identified codes)**:**	
1.1. Agent-related causes (see table 1 code)	
11.2. Causes related to the nature of handled products (see table 2.1 code)	
11.3. Causes related to contaminated material (see table 2.2 code)	
11.4. Causes related to working process (see table 3.1 code)	
11.5. Causes related to maintenance or cleaning operations or activities (see table 3.2 code)	
11.6. Causes related to innovative processes (see table 3.3 code)	
11.7. Causes related to the inhalation of chemicals or biological contaminants (see table 4.1. code)	
11.8. Causes related to contact with chemicals or biological contaminants (see table 4.2. code)	
11.9. Causes related to the inoculation of biological contaminants (see table 4.3. code)	
11.10. Causes related to direct exposure to physical agents (see table 4.4. code)	
11.11. Causes related to indirect exposure to physical agents (see table 4.5. code)	
1.12. Causes related to ergonomic overload (see table 4.6 code)	
1.13. Causes related to occupational risk prevention: workplace (see table 5.1 code)	
11.14. Causes related to occupational risk prevention: prevention management (see table 5.2 code)	

11.15. Causes related to occupational risk prevention: preventive activities (see table 5.3 code)	
11.16. Causes related to personal or individual factors: behavioural factors (see table 6.1 code)	
11.17. Causes related to personal or individual factors: intrinsic, health or capability factors (see table 6.2 code)	
11.18. Causes related to work organisation: task performance (see table 7.1 code)	
11.19. Causes related to work organisation: training, information, instructions (see table 7.2 code)	
11.20. Causes related to Work organisation: work equipment selection, improper use or maintenance or use not anticipated by manufacturer (see table 7.3 code)	
11.21.	
11.22.	
11.23. Personal/Individual Factors	

12. DATA FROM COMPANY OR WORKPLACE WHERE THE EXPOSURE CAUSING THE DISEASE TOOK PLACE						
12.1. Company's main economic activity						
12.2. Municipality						

13. DATA CONCERNING WORKER HEALTH MONITORING AND TO THE ORGANISATIONAL MODALITY OF THE HEALTH SERVICE AT COMPANY	
13.1. Modality of the preventive organisation in Worker Health Monitoring (check only one option): 1. Medical unit is part of the Company Prevention Service and carries out the Medical Examinations with its own resources 2. Medical unit is part of the Company Prevention Service but outsources medical examinations 3. Medical unit is part of a shared Prevention Service and carries out medical examinations with its own resources 4. Medical unit is part of a shared Prevention Service but outsources Medical Examinations. 5. Medical unit is part of external Prevention Services	
13.2. Was the occupational disease reported to the Medical unit?	
13.3. Is there documentation of the specific Workers health monitoring in relation to the occupational disease causal risk?	

ANNEX VI: OCCUPATIONAL DISEASE CODE OF CAUSES AND APPLICATION

General structure of occupational disease code of causes

TABLE 1: Agent Code

Record: The nature of the agent associated with the disease's onset.

Guide: Regarding agents that are most likely related to the disease and therefore to a preferential preventive interest.

It is structured in 4 sections according to the Agent's nature:

- **Chemical Agents.** It includes the chemical agents that are the cause of the disease.
- **Biological Agents.** It includes the biological agents that are the cause of the disease. Given their variability and taking into account the preventive approach of the record, they have been grouped according to the biological agents that are classified by European Directive 2000/54/CE.
- **Physical Agents.** It includes physical agents that are the cause of the disease.
- **Ergonomic Condition.** It includes the ergonomic condition that is the cause of the disease. They have been grouped according to the sort of biomechanical requirement resulting from the task's performance.

TABLE 2: Contaminated products or material code

Record: The element containing the contaminant which is the cause of the disease is applicable to diseases caused by chemical or biological agents.

Guide: Regarding products or materials whose handling implies a higher risk for the occupational disease and, as a result, preventive measures must be maximised.

They are structured in 2 sections according to the product or the contaminating material's nature:

- **Product nature.** It includes most used industrial products that may be the polluting agent. This code is based on the manufacturing activities in the International Standard Industrial Classification (ISIC), 4th revision, UN-2009.

- **Contaminated material.** It includes the transmission elements of contamination according to their use in the working process: raw material, intermediate substances or by-products.

TABLE 3: Source of contamination, infection, and biomechanical requirement code

Record: The working condition determining worker exposure to the agent associated with the disease.

Guide: Regarding work processes or activities, the performance of which involves a higher risk for occupational disease and therefore on what preventive action measures must be taken for design, execution, technology, etc.

It is structured in 4 sections according to the activity nature that is potentially related to exposure to the cause of the disease:

- **Work processes.** When the main process performance can be the determinant of the exposure to the agent.

- **Causes arising from maintenance or cleaning operations or activities**. When exposure to the agent is not part of the main work processes, but of ancillary activities such as maintenance, cleaning, DDD operations, etc.

- **Causes arising from innovation processes.** Where exposure to the agent has been concurrent with the implementation or use of previously unimplemented or non-used substances, technology or working procedures.

- **Other events related to contamination.** Includes any facts or events which have not been specified in the previous sections.

TABLE 4: Contact, infection, exposure method or overload form code

Record: The route of entry, infection, exposure or working condition (depending on the agent's different action mechanism), associated with the disease, and consequently is geared towards preventive measures that prevent this form of contact.

Guide: Regarding collective preventive measures or personal protective equipment. Its implementation is a priority to prevent the disease.

It is structured into 6 sections:

- **Inhalation.** It includes cases in which the Chemical or Biological Agent is transmitted or absorbed by respiratory route due to the inhalation of aerosols, dust, fumes, etc.

- **Contact.** It includes the cases in which the agent's action mechanism or its absorption requires direct skin contact.

- **Inoculation.** It includes cases in which the main infection mechanism is produced by skin prick or cuts. (Note: this mechanism can be questioned for its possible consideration as a work accident).

- **Direct Exposure.** It includes cases in which exposure to Physical Agents is a direct consequence of the activity performed.

- **Indirect Exposure.** It includes cases in which exposure to physical agents is consistent with the proximity of the workplace to an emission source.

- **Overload form.** It includes cases in which the performance of the activity produces an overload in the musculoskeletal system**.**

TABLE 5: Causes code related to Occupational Risks Prevention

Record: Causes attributable to the inadequacy or lack of implementation of preventive measures, including their organisation or planning.

Guide: Regarding improvements which must be made in instruments designed for prevention; their planning, monitoring and implementation.

It is structured into 3 sections:

- **Workplace.** It includes causes related to working environmental quality.

- **Prevention management.** It includes causes related to the instruments designed for prevention at company (procedures, organisation, policies, etc.).

- **Preventive activities.** It includes causes related to the absence or inadequate execution of preventive measures.

- **Other causes related to Occupational Risk Prevention.** It includes causes not specified in the previous sections.

TABLE 6: Personal or individual factors

Record: Any causes related to the worker behaviour or aptitude that may contribute to the onset of the disease.

Guide: Regarding more effective implementation and adaptation to the worker's job activity in an improved fashion.

It is structured into 3 sections:

- **Behavioural factors.** It includes a set of causes from non-compliance with working safety procedures or an improper use of work or prevention equipment.
- **Intrinsic, health or capability factors.** It includes a set of intrinsic causes of the worker that may result in increased vulnerability to the occupational disease.
- **Other causes related to personal or individual factors**. It includes causes related to personal or individual factors which are not specified in the previous sections.

TABLE 7: Work organisation

Record: Any cause related to working methods, type of task and its performance, instructions, training, information and working teams.

Guide: Regarding aspects on work organisation that need to be improved, which are related to the disease onset.

It is structured into 3 sections:

- **Task Performance.** It includes unusual events in carrying out the task related to the disease onset.
- **Training, Information, Instructions and Signalization.** It includes aspects related to the information and training provided to the worker in relation to the risk potentially causing the disease, as well as the execution instructions and signalization.

- **Work equipment selection, improper use or maintenance or use not anticipated by the manufacturer.** It includes information concerning the adequacy and status of the instrumental elements needed for the execution of the task.

TABLE 1: AGENTS CODE	
1.1. CHEMICAL AGENTS	
Code does not apply	1100
Arsenic and compounds	1101
Beryllium (glucinium) and compounds	1102
Cadmium and compounds	1103
Trivalent chromium and compounds	1104
Chromium (VI) and Chromium (VI) compound	1105
Phosphorus and compounds	1106
Manganese and compounds	1107
Mercury and compounds	1108
Nickel and compounds	1109
Lead and compounds	1110
Thallium and compounds	1111
Vanadium and compounds	1112
Antimony and derivates	1113
Bromine and inorganic compounds	1114
Chlorine and inorganic compounds	1115
Fluorine and compounds	1116
Iodine and inorganic compounds	1117
Nitric acid	1118
Sulphuric acid and sulphur oxides	1119
Sulphuric acid	1120
Hydrocyanic acid, cyanides, cyanogen compounds and Acrylonitrile	1121
Organic acids	1122
Alcohols	1123
Phenols, homologues and halogen derivatives thereof, pentachlorophenol, hydroxybenzonitrile	1124
Aldehydes	1125

Saturated or unsaturated or cyclical or non-cyclic aliphatic hydrocarbons; constituents of ether, petroleum and gasoline. Saturates: Alkanes, paraffins	1126
Polycyclic aromatic hydrocarbons (PAH), coal distillation products: soot, tar, bitumen, pitch, anthracene, mineral oils, crude paraffin, and compounds, products, and residues thereof, and other carcinogenic factors. Coal distillation	1127
Saturated or unsaturated, cyclical or non-cyclical aliphatic hydrocarbon halogenated derivatives.	1128
Methyl bromide, vinyl chloride monomer	1129
Amines and hydrazines	1130
Ammonia	1131
Benzene	1133
Naphthalene and its counterparts	1134
Xylene, toluene	1135
Vinylbenzene (styrene) and divinylbenzene	1136
Halogenated derivatives of aromatic hydrocarbons	1137
Nitro derivatives of aromatic hydrocarbons: nitro-dinitrobenzene, dinitro/ trinitrotoluene.	1138
Nitrates derived from phenols and homologues: Dinitrophenol, dinitro-ortho-cresol, dinoseb (2-sec butyl-4,6-Dinitrophenol), ioxynil, bromoxynil	1139
Ketones	1140
Epoxides, ethylene oxide, tetrahydrofuran, furfural, epichlorohydrin, guaiacol, furfuryl alcohol, propylene oxide	1141
Organic esters and halogenated derivatives thereof	1142
Glycol ethers	1143
Glycols	1144
Polyurethanes (isocyanates)	1145
Aliphatic nitro-derivatives, nitro-alkanes	1146
Nitro-glycerine and other nitric acid esters	1147
Bis-(chloro-methyl) ether	1148
Organophosphates and carbamates	1149
Organochlorides	1150
Carbon oxide	1151

Carbon oxychloride	1152
Nitrogen oxides	1153
Carbon sulphide	1154
Free silica dust	1155
Coal dust	1156
Asbestos dust	1157
Aluminium dust	1158
Other mineral dusts (talc, kaolin, fuller's earth, bentonite, sepiolite, mica, other natural silicates)	1159
Hardwood dust	1160
Thomas slag	1161
High molecular weight substances (substances of plant and animal origin; micro-organisms; and enzymatic substances of plant or animal and/or micro-organism origin)	1162
Low molecular weight substances (metals and salts thereof, wood powders, pharmaceuticals, chemical-plastic substances, additives, etc.)	1163
Chemical agent not listed in the above headings	1199
1.2. BIOLOGICAL AGENTS (Directive 2000/54/EC of the European Parliament and of the Council of 18 September 2000 on the protection of workers from risks related to exposure to biological agents at work)	
Code does not apply	1200
1.2.1. BACTERIA AND SIMILAR ORGANISM	
Classified in group 2 (Directive 2000/54/EC)	1212
Classified in group 3 (Directive 2000/54/EC)	1213
Others bacteria and similar organisms not listed in the above headings	1219
1.2.2. VIRUSES	
Classified in group 2 (Directive 2000/54/EC)	1222
Classified in group 3 (Directive 2000/54/EC)	1223
Classified in group 4 (Directive 2000/54/EC)	1224
Other viruses not listed in the above headings	1229
1.2.3. PARASITES	
Classified in group 2 DIRECTIVE 2000/54/EC	1232

Classified in group 3 DIRECTIVE 2000/54/EC	1233
Other parasites not listed in the above headings	1239
1.2.4. FUNGI	
Classified in group 2 DIRECTIVE 2000/54/EC	1242
Classified in group 3 DIRECTIVE 2000/54/EC	1243
Other fungi not listed in the above headings	1249
1.2.9. OTHER BIOLOGICAL AGENTS	
Others biological agent not listed in the above headings	1299
1.3. PHYSICAL AGENTS	
Code does not apply	1300
Noise	1301
Vibrations	1302
Alpha radiation	1303
Beta radiation	1304
Gamma radiation	1305
Rx	1306
Non-specified ionizing radiation	1307
Visible radiation (laser)	1308
UVA radiation	1309
UVB radiation	1310
UVC radiation	1311
Non-specified non-ionizing radiations	1312
Solar radiation	1312
Atmospheric pressure	1314
Others physical agents not listed in the above headings	1399
1.4 ERGONOMIC CONDITION	
Code does not apply	1400
Physical strain (manual load handling)	1401
Maintain painful postures	1402

Execution of repeated movements	1403
Maintain unforced but static postures	1404
Movements requiring application of force or pressure	1405
High working pace	1406
Non-specified ergonomic factors	1407
Sustained efforts of voice	1408
Others ergonomic conditions not listed in the above headings	1499

TABLE 2: CONTAMINATED PRODUCTS OR MATERIAL CODE (International Standard Industrial Classification of All Economic Activities (ISIC), Revision 4, UN 2009)	
Code does not apply	2000
2.1. PRODUCT NATURE	
Code does not apply	2100
Fertilizers	2101
Synthetic accelerators or catalysts	2102
Antiknocks	2103
Flavourings	2104
Cleaning products	2105
Varnishes and lacquers	2106
Biocides and germicides	2107
Glues and adhesives	2108
Preservatives	2109
Crops, plants or seeds	2110
Colourants, dyes or pigments for industrial use	2111
Food colourants	2112
Inorganic solvents	2113
Organic solvents	2114
Enzymes	2115
Mineral fibres	2116

Natural fibres	2117
Synthetic fibres	2118
Industrial gases	2119
Cooling gases	2120
Mineral lubricants	2121
Synthetic lubricants	2122
Medicines, including those for veterinary use	2123
Metals	2124
Pesticides	2125
Paint	2126
Polymers and their monomers	2127
Cosmetic and personal care products	2128
Laboratory reagents	2129
Resins	2130
Flame retardants	2131
Printing inks	2132
Unspecified chemical or compound	2199
2.2. CONTAMINATED MATERIAL	
Code does not apply	2200
Toxic, irritant, sensitising, infectious or radioactive nature of the raw material	2201
Toxic, irritant, sensitising, infectious or radioactive nature of materials, substances or products (others than the raw material) whose exposure is caused by the performance of a specific task	2202
Toxic, irritant, sensitizing, infectious or radioactive nature of materials, substances, products, etc. (others than the raw material) but used in different tasks in the working process	2203
Toxic, irritant, sensitising, infectious or radioactive nature of raw materials, components or additives that are incorporated into the raw material in the production process	2204
Toxic, irritant, sensitising, infectious or radioactive nature of by-products or wastes	2205
Contamination due to degradation or deterioration of raw or auxiliary materials or products	2206

Contamination due to incidents that result in a worker overexposure to the agent (spills, leaks, etc.).	2207
Other causes arising from the nature of the raw material, materials, substances, products, by-products or their wastes	2299

TABLE 3: SOURCE OF CONTAMINATION, INFECTION, AND BIOMECHANICAL REQUIREMENT CODE	
Code does not apply	3000
3.1. WORKING PROCESSES	
Code does not apply	3100
Phytosanitary product application	3101
Treatment of grain, fodder plants or ornamental plants	3102
Breeding and care of livestock or poultry	3103
Extraction, milling, crushing, washing or enrichment of minerals	3104
Processes involving land movement	3105
Application of cements, resins or hardening products for the construction industry	3106
Projection of thermal or water-repellent insulators	3107
Processes involving natural or artificial fibres handling	3108
Tars, asphalts or bituminous compounds application	3109
Machining and forming of parts (moulding, drilling, milling, sawing, etc.)	3110
Welding	3111
Processes carried out outdoors (natural or urban environment)	3112
Agglomerate process (heat treatment with adhesives)	3113
Piece assembly process	3114
Surface treatment (coating, polishing, galvanising, etc.)	3115
Synthesis of chemical substances and polymers	3116
Preparation of gases, mixtures or chemical products elaboration for industrial, domestic, sanitary, pharmacy or cosmetic use	3117
Industrial or domestic application of substances, mixtures or chemicals	3118
Application of cosmetics products	3119

Industrial food processing by adding enzymes, thickeners, dyes, preservatives, flavourings, etc.	3120
Slaughter, evisceration, cutting or other operations in meat production	3121
Medical or veterinary care	3122
Biological sample handling and clinical or veterinary laboratory works	3123
Radiodiagnosis processes or therapies with exposure to radioactive sources (people or animals).	3124
Others causes related to work processes	3199
3.2. CAUSES ARISING FROM MAINTENANCE OR CLEANING OPERATIONS OR ACTIVITIES	
Code does not apply	3200
Breakdowns or incidents repair in equipment, machinery, or installations	3201
Maintenance or cleaning of equipment, machinery, or installations	3202
Disinfection, Disinsection and Rodent Control Operations	3203
Installations dismantling processes	3204
Others causes related to maintenance or cleaning operations or activities	3299
3.3. CAUSES ARISING FROM INNOVATION PROCESSES	
Code does not apply	3300
Incorporation of new raw materials, substances or working products including their modification	3301
Incorporation of new technologies in the processes development	3302
Implementation of new working procedures	3303
Others causes related to innovation processes	3399

TABLE 4: CONTACT, INFECTION, EXPOSURE FORM OR OVERLOAD FORM CODE	
Code does not apply	4000
4.1. INHALATION	
Code does not apply	4100
Environmental contamination by aerosols or mists of chemical agents	4101
Environmental contamination by aerosols of biological agents	4102
Environmental contamination by gases or fumes of chemical agents	4103

Environmental contamination by vapours of chemical agents	4104
Environmental contamination by low molecular weight substances dusts (metals, organic products, etc.)	4105
Environmental pollution by high molecular weight substances, dust (pollen, plants, sawdust, etc.)	4106
Environmental contamination by biological content dust	4107
Presence of chemicals (substances or preparations) in the working environment (toxic, irritant, flammable, etc...) in any state (dusts, vapours, gases, etc.), whose control or elimination is not guaranteed	4108
Possibility of inhalation of a non-compatible chemical mixture (substances or preparations) or that can generate a reaction to the release of toxic, corrosive products and/or heat.	4109
Other forms of inhalation of chemical or biological contaminants	4199
4.2. CONTACT	
Code does not apply	4200
Contact with chemical agents due to splashing or spilling of liquids	4201
Contact with chemical agents derived from handling or application (catalysts, additives, preservatives, varnishes, dyes, etc.).	4202
Contact due to metallic products or their amalgams handling	4203
Contact due to plastic products handling	4204
Contact due to woods, plants or products of vegetable origin handling	4205
Contact or transmission of biological agents due to infected materials or biological samples handling	4206
Contact with an infection risk due to sick or carrier patients care	4207
Contact with an infection risk due working with sick or carrier animals	4208
Other forms of contact with chemical or biological agents	4299
4.3. INOCULATION	
Code does not apply	4300
Infection by inoculation due to handling prick or cutting instruments	4301
Infection due to stings or bites of disease-transmitting vectors	4302
Other forms of inoculation	4399
4.4. DIRECT EXPOSURE	
Code does not apply	4400

Noise and Vibrations	
Direct exposure to noise from machine or tool use	4401
Direct exposure to hand-arm vibrations from machine or tool use	4402
Direct exposure to whole-body vibrations due to working on surfaces or vibration-generating stations	4403
Ionizing radiations	
Direct exposure to ionizing radiation due to mining of radioactive minerals	4404
Direct exposure to ionising radiation due to handling emitting ionising radiation devices	4405
Direct exposure to ionizing radiation by handling radioactive isotopes	4406
Direct exposure to ionizing radiation due to handling of material with radioactive contamination	4407
Non-ionizing radiations	
Direct exposure due to working with ultraviolet radiation emitting devices (tanning beds, germicidal lamps, etc.)	4408
Direct exposure due to handling laser radiation emitting devices	4409
Direct exposure to solar radiation	4410
Direct exposure in working processes emitting radiant energy (arc or xenon welding, melting metal casting, glass casting, etc.)	4411
Other forms of direct exposure to sources of emission of physical contaminants	4499
4.5. INDIRECT EXPOSURE	
Code does not apply	4500
Indirect exposure to noise due to working close to processes, installations, equipment or machinery emitting noise (compressors, generators, etc.)	4501
Indirect exposure to whole-body vibrations by transmission of vibrations from a nearby installation	4502
Indirect exposure to ionizing radiation due to underground works	4503
Indirect exposure by working close to sources emitting ionizing radiation	4504
Indirect exposure by working close to artificial sources emitting ultraviolet radiation	4505
Other forms of indirect exposure to sources of emission of physical contaminants	4599

4.6. OVERLOAD FORM	
Code does not apply	4600
Overstrain requirements due to manual handling of loads	4601
Requirements maintained of grip force, pressure or apprehension of objects	4602
Requirements maintained of repeated shoulder, elbow or wrist movements	4603
Requirements maintained of extreme joint movements of the wrist, elbow, or shoulder	4604
Requirements maintained of lifting or reach movements with the arm	4605
The requirement to maintain continuously or repeatedly postures requiring joint support or suppose a pressure maintained on them	4606
Requirement to maintain continuously painful postures	4607
Requirement to do impact or shakes movements with arms	4608
Lack of regular breaks or rotation in activities	4609
High work pace requirement	4610
High working demand	4611
Requirement to keep a high volume of voice	4612
Combined ergonomic requirements, with 2 factors	4613
Combined ergonomic requirements, with 3 factors	4614
Combined ergonomic requirements, more than 3 factors	4615
Other not specified ergonomic requirements	4699

TABLE 5: CAUSES CODE RELATED TO OCCUPATIONAL RISKS PREVENTION	
Code does not apply	5000
5.1. WORKPLACE	
Code does not apply	5100
Mist or aerosol generation	5101
Gases or vapours presence	5102
Fumes or suspended dust presence	5103
Bad smell perception	5104
Inadequate natural ventilation	5105
Proximity to ionizing radiation sources	5106
Proximity to non-ionizing radiation sources	5107
Proximity to noise emitting sources	5108
Manual working on surface vibration transmitting	5109
Working sitting or standing on surfaces transmitting vibrations	5110
Workplace with poor air conditioning for temperature and humidity control	5111
Presence of moisture in faces (ceilings or walls)	5112
Absence/deficiency of protections to prevent the generation and spread of biological agents (including the absence/deficiency of source encapsulation devices and generally those that prevent or minimise the release of agents)	5113
Others causes related to workplaces	5199
5.2. PREVENTION MANAGEMENT	
Code does not apply	5200
Absence or insufficient procedure to regulate the implementation of occupational risk identification and evaluation activities	5201
Absence or insufficient procedure to regulate the implementation of the proposed preventive measures planned	5202
Non-existent, insufficient or deficient procedures to inform workers about occupational risks and preventive measures	5203
Non-existent, insufficient or deficient procedures concerning instructions or working methods	5204
Deficiencies in the organisation of the mandated resources (prevention organization) for the implementation of the preventive activities required by regulations	5205

Non-existent, insufficient or deficient procedures for the coordination of activities carried out by several companies	5206
Inadequate purchasing policy from the point of view of occupational risk prevention	5207
Inadequate task assignment system for reasons other than worker's lack of qualification or experience	5208
No consideration about a special worker sensitivity for the performance of the task regarding occupational risk exposure	5209
Absence or deficiency of a procedure regulating the practice of an initial and specific medical monitoring to the occupational risk exposure	5210
Absence or deficiency of a procedure regulating the practice of periodic and specific medical monitoring to occupational risk exposure	5220
Absence or deficiency of a procedure regulating the practice of a specific medical monitoring upon return at workplace after long periods of sick leave	5221
Absence or deficiency of a procedure for adapting the workplace to worker capacities	5222
Absence or deficiency of an up-to-date register of workers exposed to carcinogenic substances	5223
Absence of a register of occupational diseases	5224
Absence or deficiency of a harmonized procedure for occupational disease investigation	5225
Poor integration of occupational risk prevention in company culture	5226
Other causes related to the prevention management	5299
5.3. PREVENTIVE ACTIVITIES	
Code does not apply	5300
Non-identification of the risk(s) causing the occupational disease	5301
Insufficient or inadequate preventive measures proposed in the prevention plan arising from the risk assessment	5302
Non-implementation of the preventive measures proposed in the prevention plan derived from the risk evaluation	5303
Non-existent or inadequate preventive maintenance or lack of official periodic reviews	5304
Inadequate or non-existent training/information on risks or preventive measures	5305
Absence or insufficient plans and/or emergency measures	5306

Non-existent or inadequacy of collective protective measures	5307
Not to make available to workers the PPE, personal protective clothing or the equipment needed or be inadequate or poorly maintained, or not to monitor its correct use	5308
Inadequate medical monitoring of the related disease with the risk exposure in workplace	5309
Assigning tasks to workers with a lack of qualification or experience	5310
No identification by the labelling of samples or specimens infected with biological agents	5311
Existence of chemicals in unlabelled packaging	5312
Non-existent product safety data sheets in national language	5313
Substances with restricted use, according to the REACH Regulation with use exceeding that restriction	5314
Deficiencies in relation to the CLP Regulation, REACH	5315
Other causes related to the preventive activities	5399

TABLE 6: PERSONAL OR INDIVIDUAL FACTORS	
Code does not apply	6000
6.1. BEHAVIOURAL FACTORS	
Code does not apply	6100
Performing no assigned tasks	6101
Noncompliance with procedures and working instructions	6102
Noncompliance with established prevention regulations	6103
Inappropriate use of materials, tools or working utensils made available by the company	6104
Misuse, non-use, move away or cancellation of collective protective means, or safety devices	6105
Non-use of personal protective equipment made available by the company and obligatory use	6106
Employee present in a dangerous zone	6107
Misuse of substances or products made available by the company	6108
Other causes related to behavioural factors	6199
6.2. INTRINSIC, HEALTH OR CAPABILITY FACTORS	

Code does not apply	6200
Poor assimilation of orders received.	6201
Lack of qualification and/or experience for the task performed attributable to the employee	6202
Worker especially sensitive to occupational exposure related to the disease risk	6203
Other causes related to intrinsic, health or capability factors	6299

TABLE 7: WORK ORGANISATION	
Code does not apply	7000
7.1. TASKS PERFORMANCE	
Code does not apply	7100
Unusual task or operation for the worker who performs it, whether ordinary or sporadic within the working process	7101
Operation aimed to prevent breakdowns or recovering incidents	7102
An extraordinary operation carried out as result of incidents, accidents or emergencies.	7103
Other causes related to task performance	7199
7.2. TRAINING, INFORMATION, INSTRUCTIONS	
Code does not apply	7200
Deficiencies in the horizontal or vertical company communication system, including not understanding a language	7201
Non-existent working instructions	7202
Confusing, contradictory, or insufficient task instructions	7203
Inadequate or non-existent training/information for the task performance	7204
Non-existent or insufficient procedures to train or inform workers about the use or handling of machinery, equipment, products, raw materials and work tools	7205
Other causes related to training, information, instructions about the task	7299
7.3. WORK EQUIPMENT SELECTION, IMPROPER USE OR MAINTENANCE OR USE NOT ANTICIPATED BY THE MANUFACTURER	
Code does not apply	7300
Not making available to workers the adequate machinery, equipment and aids needed	7301
Selection of machines or equipment unsuitable for work to be performed	7302

Selection of equipment, tools and aids unsuitable for work to be performed	7303
Selection of materials, products or substances unsuitable for work to be performed	7304
Machinery used in a manner not provided for by the manufacturer.	7305
Equipment, tools and aids used in a manner not provided for by the manufacturer.	7306
General materials used in a manner not provided for by the manufacturer.	7307
Not verifying the condition of machines, tools, equipment or auxiliary means before use	7308
Lack of organisational means or procedures for blocking access to machinery, installations and workplaces.	7309
Other causes related to the selection of inadequate work equipment, use or maintenance or in a manner unanticipated by the manufacturer.	7399

Coding of occupational disease causes examples

1. Coding of occupational disease caused by chemical agents

Case study:

Worker performing machining tasks on metal parts using a milling machine, where synthetic oil is used as coolant.

An onset of respiratory syndrome occurred and was diagnosed as extrinsic allergic alveolitis, which her insurance company classifies as an occupational disease.

During the investigation of the disease, it was shown that this process provoked the appearance of coolant aerosols.

It was also evident that no forced extraction system was working, and no respiratory protection was available.

An initial occupational risk evaluation was carried out two years ago. It has not been updated, and the implementation of a forced extraction system at the operating point was recommended.

Respiratory function tests were impaired at the last medical examination, so workplace adaptation was recommended.

CODING OF OCCUPATIONAL DISEASE CAUSES		
DISEASE	Extrinsic allergic alveolitis	
AGENT CODE	Low-weight molecular substances (metals and salts, wood dusts, pharmaceuticals, plastic chemicals, additives, etc.)	1163
CONTAMINATED PRODUCTS OR MATERIAL CODE	Synthetic lubricants	2122
	Toxic, irritant, sensitizing, infectious or radioactive nature of materials, substances, products, etc. (other than raw material) but used in different tasks in the working process	2203
SOURCE OF CONTAMINATION, INFECTION, AND BIOMECHANICAL REQUIREMENT CODE	Machining and forming of parts (moulding, drilling, milling, sawing, etc.)	3110
CONTACT, INFECTION, EXPOSURE FORM OR OVERLOAD FORM CODE	Environmental contamination chemical agent aerosols or mists	4101

CODING OF OCCUPATIONAL DISEASE CAUSES		
CAUSES RELATED TO OCCUPATIONAL RISK PREVENTION CODE	Absence or insufficient procedure to regulate the implementation of the proposed preventive measures	5202
	Not taking into account occupational risk exposure in terms of special worker sensitivity of workers performing the task	5209
	Absence or deficiency of a procedure for adapting the workplace to worker capacities	5222
	Non-existent or inadequacy of collective protective measures.	5307
PERSONAL OR INDIVIDUAL FACTORS CODE	Workers especially sensitive to occupational exposure related to the risk of disease	6203

2. Coding of occupational disease caused by biological agents

Case study:

Worker who processes biological samples at a veterinary microbiology laboratory.

She develops a feverish condition that intensifies in the afternoons, accompanied by joint pain that progressively develops into a state of intense tiredness. After the clinical study, the primary care physician diagnoses brucellosis and refers her to her insurance company, who classifies it as an occupational disease.

In the investigation of the disease, it was revealed that she had cultured serum samples in previous weeks from a sheep health campaign that had been initiated after the occurrence of several miscarriages.

In the course of the investigation of the disease, it became clear that the biosecurity hood had been faulty for months.

The worker used a surgical mask for inoculation.

CODING OF OCCUPATIONAL DISEASE CAUSES		
DISEASE	Brucellosis	
AGENT CODE	Bacteria and similar organism classified in group 3 (Directive 2000/54/EC)	1213
CONTAMINATED PRODUCTS OR MATERIAL CODE	Toxic, irritant, sensitising, infectious or radioactive nature of the raw material	2201
SOURCE OF CONTAMINATION, INFECTION, AND BIOMECHANICAL REQUIREMENT CODE	Biological sample handling and clinical or veterinary laboratory works	3123
CONTACT, INFECTION, EXPOSURE FORM OR OVERLOAD FORM CODE	Other forms of inhalation of chemical or biological contaminants	4199
CAUSES CODE RELATED TO OCCUPATIONAL RISKS PREVENTION	Non-existent or inadequate preventive maintenance or lack of official periodic reviews	5304
	Non-existence or inadequacy of collective protective safeguard measures	5307
	Not making PPE available to workers: personal protective clothing or equipment needed or in an inadequate or poorly maintained state, or not monitoring its proper use	5308

3. Coding of occupational disease caused by physical agents

Case study:

Worker performing tyre replacement work in a vehicle repair shop using a pneumatic tightening machine.

He experienced pain in his right (dominant) hand, which had intensified during the workday, accompanied by a tingling sensation and loss of strength.

The disease investigation reveals a five-year work history of exposure transmitted from hand to arm vibration; the tool handle does not have cushioning elements. Following the worker's complaint, the company provided him with protective gloves against mechanical risk (EN 388 standard).

There is no occupational workplace risk evaluation, although a general medical examination is carried out yearly.

CODING OF OCCUPATIONAL DISEASE CAUSES		
DISEASE	Angioneurotic disorder caused by vibration	
AGENT CODE	Vibration	1302
SOURCE OF CONTAMINATION, INFECTION, AND BIOMECHANICAL REQUIREMENT CODE: WORKING PROCESSES	Piece assembly process	3114
CONTACT, INFECTION, EXPOSURE FORM OR OVERLOAD FORM CODE: DIRECT EXPOSURE	Direct exposure to hand-arm vibrations from machine or tool use	4402
PREVENTION MANAGEMENT	Absence or insufficient procedure to regulate the implementation of occupational risk identification and evaluation activities	5201
	Not making PPE available to workers: personal protective clothing or equipment needed or in an inadequate or poorly maintained state, or not monitoring its proper use	5308
	Inadequate medical monitoring of the related disease with the risk exposure in workplace	5309

4. Coding of occupational disease caused by ergonomic factors

Case study:

53-year-old worker who performs a deboning task for a meat processing company.

For the last three months, she has been reporting pain in her right elbow and forearm (dominant arm), which intensifies throughout the workday.

At the last medical examination, and after applying the specific medical monitoring protocol for repeated movements, the occupational physician refers her to the insurance company to confirm a diagnosis of suspicion of epicondylitis, which is classified as an occupational disease.

The disease investigation reveals a three-year work history at the current job, and that in the last year there has been an increase in the number of pieces processed.

She is forced to carry out repeated wrist movements in order to carry out his work, applying pressure on the piece of meat, keeping his arm stretched out.

The activity performed requires her to perform repeated wrist movements and pressure application on the piece of meat, keeping his elbow extended.

After the occupational risk assessment, a set of preventive measures were proposed for boning tasks related to the improvement of cutting instrument maintenance and to alternate this task with others that did not require repeated effort of the upper arm. These measures were not implemented.

CODING OF OCCUPATIONAL DISEASE CAUSES		
DISEASE	Epicondylitis	
AGENT CODE	Execution of repeated movements	1403
	Movements requiring application of force or pressure	1405
	High working pace	1406
SOURCE OF CONTAMINATION, INFECTION, AND BIOMECHANICAL REQUIREMENT CODE: WORKING PROCESSES	Slaughter, evisceration, cutting or other operations in meat production	3121
CONTACT, INFECTION, EXPOSURE FORM OR OVERLOAD FORM CODE	Three-factor combined ergonomic requirements	4614

CODING OF OCCUPATIONAL DISEASE CAUSES		
CAUSES CODE RELATED TO OCCUPATIONAL RISKS PREVENTION	Absence or insufficient procedure to regulate the implementation of proposed preventive measures	5202
	Not implementing preventive measures proposed in the prevention plan derived from the risk evaluation	5303
	Non-existent or inadequate preventive maintenance or lack of official periodic reviews	5304

ANNEX VII: OCCUPATIONAL EXPOSURE VERIFICATION AND PREVENTIVE MEASURES

INDICATIVE TABLE FOR OCCUPATIONAL EXPOSURE VERIFICATION	
OCCUPATIONAL DISEASE GROUP	**VERIFICATION ELEMENTS**
Occupational diseases caused by Chemical agents	• Safety Data Sheet for substances used in the task performed *(Note: for carcinogenic agents, see INFOCARQUIM http://infocarquim.inssbt.es)* • Environmental conditions at workplace • Existing collective protective measures • Personal Protective Equipment provided to the worker • Measures on work organisation • Environmental or biological control measurements (if any) for the substances involved and results relating to Occupational Exposure Limits.
Occupational diseases caused by physical agents: Noise, Vibration, Ionising Radiation, Ultraviolet Radiation, Radiant Energy, Compression or atmospheric decompression.	• Existing collective protective measures • Personal Protective Equipment provided to the worker • Measures on work organisation • Environmental measurements to control exposure to physical agents involved
Occupational diseases due to painful posture or repetitive movements: Bursitis, Tendinitis, wrenching of spinous processes, neuropathies due to entrapment and injuries to the meniscus.	• Ergonomic risk type • Existing collective protective measures. • Personal Protective Equipment provided to the worker • Measures on work organisation
Occupational vocal disorders	• Acoustic conditions in classroom or premises: noise insulation, reverberation, urban noise or adjacent sporting activities. • Thermo-hygrometric conditions of the classroom or premises. • Task organisational measures: voice time of use and intensity, etc. • Personal protective equipment in case of adverse acoustic conditions: microphones, megaphones, etc. • Voice Specific Medical Monitoring Protocol and Individual Voice Hygiene Programs

INDICATIVE TABLE FOR OCCUPATIONAL EXPOSURE VERIFICATION	
OCCUPATIONAL DISEASE GROUP	**VERIFICATION ELEMENTS**
Occupational diseases caused by Biological Agents	Biological agent(s) or infection source to which workers were exposed. *(Note: See BIODAT biological agents tabs (http://biodat.insht.es/)* Environmental workplace conditions Existing collective protective measures, especially protection against cut or punctured instruments Personal Protective Equipment provided to the worker. Work organisation measures. Vaccinations.

DT.99.2.20

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