



International  
Labour  
Organization

100  
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# SAFETY AND HEALTH AT THE HEART OF THE FUTURE OF WORK

Building on 100 years  
of experience



# INTRODUCTION

**Every year 2.78 million workers die from occupational accidents and work-related diseases (of which 2.4 million are disease-related) and an additional 374 million workers suffer from non-fatal occupational accidents.** Aside from the economic cost, there is an intangible cost, not fully recognized in these figures, of the immeasurable human suffering caused by poor occupational safety and health (OSH) conditions. This is tragic and regrettable because, as research and practice over the past century has repeatedly demonstrated, this suffering is largely preventable.

Psychosocial risks, work-related stress and non-communicable diseases are of growing concern for many workers in all parts of the world. At the same time, many workers remain challenged by persistent work-related safety and health risks and it is important not to overlook these populations as the world of work continues to transform.

When we look to the future of safety and health at work, we are also called to take stock of the developments of the past century. The ILO was founded on the concept of safe and healthy work, and OSH was embedded in the rationale for its creation. While its response to OSH challenges has changed over time, the adoption and promotion of OSH-related instruments has continued to occupy a central place in the activities of the ILO. Currently, along with the major ILO Declarations, there are more than 40 instruments specifically dealing with OSH.

Another prominent feature of the ILO's work has been the development of ILO Codes of Practice, providing OSH guidance in various economic sectors and on specific hazards; as well as the production of ILO guidelines on OSH management systems, and on workers' health surveillance. The move to creating a **culture of prevention** has resulted in numerous technical publications as well as OSH training packages designed to further protect and promote the health and safety of workers around the world.

**The ILO has adopted more than 40 international labour standards specifically dealing with occupational safety and health. These standards can be classified as those:**

- **RELATED TO SPECIFIC RISKS**  
(such as ionizing radiation, asbestos, occupational cancer and chemicals)
- **RELATED TO SPECIFIC SECTORS OR BRANCHES OF WORK ACTIVITY**  
(such as agriculture, construction and mining)
- **ENCOMPASSING GENERAL PRINCIPLES AND OUTCOMES**  
(such as those relating to management of OSH, labour inspection and welfare facilities)
- **DEALING WITH THE FUNDAMENTAL PRINCIPLES OF OCCUPATIONAL SAFETY AND HEALTH**
  - Occupational Safety and Health Convention, 1981 (No. 155) and its Protocol of 2002
  - Occupational Health Services Convention, 1985 (No. 161); and
  - Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187)

# WHAT DOES THE PRESENT AND THE FUTURE OF WORK HOLD FOR OSH?

## 1. TECHNOLOGY

Rapidly advancing technologies affect almost every aspect in the world of work. Digitalization, robotics, and the use of nanotechnology, among others, have revolutionized the workplace but have simultaneously raised serious OSH concerns. For example, increased digitalization has provided the opportunity of real-time monitoring of workers to reduce hazardous exposures, but has simultaneously reduced privacy through the collection and recording of sensitive personal information.

## 2. DEMOGRAPHICS

The global workforce is in constant flux. In certain regions, youth populations are expanding, while in others, populations are ageing. Gender gaps in the labour market persist in both developed and developing countries, and women are more likely to work in non-standard work arrangements and in home-based platform work. While home-based work can remove female workers from hazardous workplaces, the lack of OSH oversight in non-formal settings can cause its own unique challenges. In the case of sedentary and repetitive work, women are increasingly affected by musculoskeletal disorders (MSDs), and face a higher risk of developing MSDs when compared to men performing the same tasks.

## 3. SUSTAINABLE DEVELOPMENT

Human induced climate change is a major driver transforming the world of work. Air pollution from coal mining, for example, directly impacts the health of miners, but also indirectly affects workers' health in other industries around them, as well as the general public. While the increase of green jobs and industries will promote low-carbon societies and may reduce hazardous work in traditional sectors such as mining, green jobs may also give rise to emerging and unknown risks, such as exposure to chemicals in the recycling sector.

## 4. CHANGES IN WORK ORGANIZATION

The demands of an increasingly globalized world have led to a growing number of workers involved in excessive hours of work and non-standard forms of employment. The growth of the globalized platform economy has blurred the lines between home and work – on one hand reducing the stress associated with commuting and increasing self-reliance, while on the other hand, creating unique psychosocial pressures for workers attempting to balance the demands of work life and home based responsibilities.

# HOW IS THE FIELD OF OSH EFFECTIVELY RISING TO THESE TRANSFORMATIONAL CHALLENGES & OPPORTUNITIES?

## ANTICIPATION OF NEW OSH RISKS

With new technologies, shifting demographics, climate change and different patterns of employment and work organization shaping the world of work, it has and will become more important than ever to anticipate new and emerging work-related safety and health risks. Anticipating risks is a crucial first step to effectively managing them and to building a preventative OSH culture in an ever-changing world. Practices to do this include forecasting, technology assessments and future studies, which enable the identification of potential work-related safety and health risks and the development of effective preventative actions.

## MULTIDISCIPLINARITY IN MANAGING OSH

An interdisciplinary approach to OSH could aim to bring together such disciplines as: law (public policy and employment law); work design (engineering, ergonomic, software, and automation); tools (technology, health tech, and sensors); the environment; physical and social impacts (public health, nutrition, physical activity, and demographics); human nature (psychology sociology and economics); medicine and neuroscience; and work organization, in addition to design and human resources.

## BUILDING COMPETENCE ON OSH

There is a growing need to mainstream OSH into the core of general education for everyone before they enter the world of work, and continuing throughout their working lives. Integrating OSH into general education and into vocational training programs can help build safer and healthier future generations of workers. Promoting lifelong learning on OSH can help workers and employers learn about, and adapt to, emerging as well as persistent OSH risks, thus improving safety and health throughout the work-life continuum.

## WIDENING THE HORIZON – THE LINK TO PUBLIC HEALTH

OSH does not end at work. The effects and outcomes of OSH have a clear spill over on people's health and well-being in general, and on that of society as a whole. If work is recognized as a social determinant of health, then there is a need for greater attention to the connections between OSH and public health, in health promotion, prevention and management of emerging psychosocial risks, mental health disorders and non-communicable diseases.

## INTERNATIONAL LABOUR STANDARDS AND OTHER INSTRUMENTS ON OSH

In an evolving world of work, the ILO's OSH instruments remain extremely valid and relevant. Not only are conventions and recommendations reviewed to ensure they are robust and responsive to changing demands, they are drafted in such a way as to be resilient to the changing OSH challenges. The latest OSH instruments emphasize the importance of developing a national preventative safety and health culture in which the right to a safe and healthy working environment is respected at all levels.

## REINFORCING THE ROLE OF GOVERNMENTS AND SOCIAL PARTNERS AND EXPANDING PARTNERSHIPS

Tripartite representation of governments, workers and employers is at the heart of the ILO's labour standards and instruments on OSH and effective social dialogue will continue to be crucial to address the safety and health concerns of the future, many of which are still unknown. As the workplace continues to transform, there will be a growing need to expand partnerships and increase collaboration with additional actors such as civil society institutions, non-governmental organisations on OSH, as well as public and private OSH institutes and universities.

## WHERE DO WE GO FROM HERE?

The world of work is transforming before our eyes, bringing with it unique opportunities while simultaneously providing novel challenges.

We are unable to predict exactly what type of technology will exist in the future, how it will be integrated into the world of work, and what impacts – positive or negative – this will have on OSH. Therefore our responses to this unknown transformation must evolve in an inclusive and **human-centred way**, emphasizing the importance of **life-long learning and continued skill development**.

The human-centered approach for OSH in the future of work requires innovative investments in people's capabilities, enabling them to acquire and update skills and supporting them through the transformations they undergo in their life course. Including OSH education and training in lifelong learning can help workers and employers adapt to new, emerging, and persistent safety and health risks and improve OSH outcomes at work.

In January 2019, at the beginning of the ILO's centenary celebrations, the ILO Global Commission on the Future of Work called for a **Universal Labour Guarantee**, including fundamental workers' rights, an "adequate living wage", limits on hours of work and **ensuring safe and healthy workplaces**. The Commission also called for **the recognition of safety and health at work as a fundamental principle and right at work**.

While the road ahead presents many new challenges to safety and health at work, it is important for governments, employers and workers, and other stakeholders to seize the opportunities at hand to create a safe and healthy future of work for all. The time to take action is now.