

SUBMISSION REPORT ON INTERNATIONAL LABOUR ORGANIZATION INSTRUMENTS:

Biological Hazards in the Working Environment Convention, 2025 (No. 192) and Biological Hazards in the Working Environment Recommendation, 2025 (No. 209)

Introduction

1. Article 19 of the International Labour Organization (ILO) Constitution requires Member States to submit the texts of newly adopted ILO instruments to their 'competent authority' and report to the ILO on proposed action with respect to the new instruments. In Australia, the competent authority is the Parliament of the Commonwealth of Australia.
2. Unless there are exceptional circumstances, this should occur within 12 months of the adoption of the instruments.
3. ILO instruments can take one of two forms. Conventions are instruments which have treaty status and create binding legal obligations if ratified by a Member State. Recommendations are non-binding instruments which provide guidance on the development of national policy and legislation as well as on the implementation of an accompanying Convention.

Adoption of the Instruments

4. On 13 June 2025, the 113th Session of the ILO International Labour Conference (ILC) adopted the *Biological Hazards in the Working Environment Convention, 2025 (No. 192)* (**the Convention**) and the accompanying *Biological Hazards in the Working Environment Recommendation, 2025 (No. 209)* (**the Recommendation**).
5. The instruments are the first international labour standards directly aimed at preventing exposure to, and protecting workers from, biological hazards in the workplace.
6. The Convention calls on Member States to formulate national policies and adopt measures on the prevention and protection against biological hazards in the workplace, and to develop preparedness and response measures to deal with workplace accidents and emergencies. It also requires employers to collaborate with workers when managing risks, including through preventative and protective measures, associated with biological hazards.
7. The accompanying Recommendation provides detailed guidance on implementation of the Convention. This includes guidance on risk assessment, early warning systems, preparedness, and response measures and training. It also further elaborates on the definition of biological hazards and modes of transmission.
8. In accordance with usual practice, the Department of Employment and Workplace Relations consulted with relevant Commonwealth authorities, state and territory governments and Australia's ILO social partners (the Australian Chamber of Commerce and Industry, and the Australian Council of Trade Unions) during negotiation of the instruments.
9. At the 113th ILC, the Australian Government voted in favour of the adoption of both the Convention and Recommendation. Australia's Worker representative similarly voted in favour of both instruments. No vote was recorded for Australia's Employer representative.
10. The full text of the Convention is at **Attachment A** of this submission. The full text of the Recommendation is at **Attachments B**.

Proposed Action

11. The Australian Government is committed to protecting and strengthening workplace health and safety rights both domestically and internationally. Australia recently completed ratification of all fundamental ILO Conventions, including those relating to occupational safety and health, becoming the first country in the Asia Pacific to do so.
12. Under Australia's long-standing ratification process, a treaty is not ratified unless Australian law and practice complies with its obligations. Compliance is established by a full law and practice assessment, undertaken in consultation with states and territories, the Office of International Law in the Attorney-General's Department and other relevant Commonwealth authorities.
13. Consultation with Australia's ILO social partners will also continue to occur.
14. The Australian Government will consider whether to ratify this Convention in line with its usual practices. Should the Government decide to proceed with ratification, due opportunity for Parliamentary scrutiny of the Convention, and whether to take binding treaty action in relation to it, will occur through the Joint Standing Committee on Treaties in line with Australia's established treaty-making process.
15. No further formal domestic action is required with respect to the Recommendation as ILO recommendations are non-binding. The Australian Government has circulated the text of the instruments to state and territory governments and relevant Commonwealth authorities for their visibility and consideration. Various objectives of the Recommendation appear to be consistent with Australian law and practice as Australia has a strong, principles-based work health and safety framework. This framework is legislated and regulated separately by each state, territory and Commonwealth jurisdiction.



▶ Texts adopted

International Labour Conference – 113th Session, Geneva, 2025

Convention concerning prevention and protection against biological hazards in the working environment

(13 June 2025)

The General Conference of the International Labour Organization,

Having been convened in Geneva by the Governing Body of the International Labour Office, and having met at its 113th Session on 2 June 2025,

Recalling the solemn constitutional obligation of the International Labour Organization to further among the nations of the world programmes which will achieve adequate protection for the life and health of workers in all occupations,

Recalling the inclusion of a safe and healthy working environment in the ILO's framework of fundamental principles and rights at work by the International Labour Conference at its 110th Session (2022),

Considering the objective to provide a legal framework for the respect, promotion and realization of the fundamental principle and right to a safe and healthy working environment concerning biological hazards, including provisions for preparedness and response arrangements for the effective management of emergencies related to biological hazards in the working environment, taking emerging and re-emerging hazards and risks into account,

Stressing the importance of promoting international policy coherence and cooperation in the prevention of diseases and injuries caused by biological hazards in the working environment,

Recognizing the relevance of the Occupational Safety and Health Convention, 1981 (No. 155), and the Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187), considered as fundamental Conventions within the meaning of the ILO Declaration on Fundamental Principles and Rights at Work (1998), as amended in 2022, and the relevance of the Protocol of 2002 to Convention No. 155 and the Occupational Health Services Convention, 1985 (No. 161),

Noting the need to revise the Anthrax Prevention Recommendation, 1919 (No. 3), and to close the gap in coverage of international labour standards concerning other biological hazards in the working environment,

Noting that this Convention constitutes the first international instrument specifically addressing biological hazards in the working environment at the global level,

Stressing the need to promote the effective management of occupational safety and health regarding biological hazards in the working environment through collaborative means and measures by relevant actors, including public health and occupational safety and health authorities and employers' and workers' organizations, in their respective areas of responsibility,

Having decided upon the adoption of certain proposals related to occupational safety and health protection against biological hazards, which is the fourth item on the agenda of the session,

Having determined that these proposals shall take the form of an international Convention, adopts this 13 June 2025 the following Convention, which may be cited as the Biological Hazards in the Working Environment Convention, 2025:

I. Definitions and scope

Article 1

For the purposes of this Convention:

- (a) "biological hazards" refers to any microorganisms, cells or cell cultures, endoparasites or noncellular microbiological entities, including those which have been genetically modified, and their associated allergens and toxins, as well as allergens, toxins and irritants of plant or animal origin, when exposure is work-related, which can cause harm to human health. Harm to human health caused by exposure to biological hazards in the working environment includes diseases and injuries;
- (b) "exposure to biological hazards in the working environment" refers to an event during which a worker comes into contact with, or is in close proximity to, biological hazards in the working environment. This exposure includes work-related activities and public health situations. The potential for infection or harm to occur is intrinsically linked to the modes of transmission and routes of exposure, which are critical to consider when devising appropriate preventive strategies and measures;
- (c) "biological risk" refers to the combination of the likelihood of an occurrence of a hazardous event caused by exposure to a biological hazard and the severity of injury or damage to the health of people caused by this event;
- (d) "evaluation of biological risks by the competent authorities" refers to a systematic process for the identification of biological hazards and evaluation of risks by the competent authorities to support the development of a regulatory framework or guidelines for appropriate and proportionate risk control measures in relation to the biological risks associated with the work being performed. This evaluation takes into account:
 - (i) the characteristics of the hazards, including their potential to cause harm to human health and the severity of this harm;
 - (ii) the availability of effective diagnosis, prophylaxis and treatment;
 - (iii) the public health risks in terms of spread to the population or the environment;
- (e) "workers" covers all employed persons, including public employees.

Article 2

1. This Convention applies to all workers in all branches of economic activity.
2. A Member which ratifies this Convention may, after consultation with the most representative organizations of employers and workers concerned, and on the basis of an evaluation by the competent authorities of the biological risks involved and of the preventive and protective measures to be applied, exclude from its application, in part or in whole, particular branches of economic activity or limited categories of workers in respect of which

its application would raise special problems of a substantial nature, on condition that a safe and healthy working environment is maintained.

3. Each Member which avails itself of the possibility afforded in the preceding paragraph shall list, in its first report on the application of the Convention under article 22 of the Constitution of the International Labour Organization, the particular branches of economic activity or categories of workers thus excluded, giving the reasons for such exclusion and describing any measures taken to provide adequate protection to excluded workers, and shall indicate in subsequent reports any progress towards wider application. Members shall make every effort to end exclusions at the earliest opportunity.

II. National policy

Article 3

Each Member shall, consistent with national law and practice and in consultation with the most representative organizations of employers and workers, integrate the protection against exposure to biological hazards in the working environment into its national policy on occupational safety and health, based on an evaluation of biological risks by the competent authorities, and shall periodically review that policy.

Article 4

With respect to biological hazards in the working environment, the national policy shall take account of:

- (a) other relevant policies, including on public health and the environment, where these policies are consistent with, complement or improve occupational safety and health provisions;
- (b) the best available information concerning the management of occupational safety and health regarding biological hazards in the working environment;
- (c) the need to develop arrangements for the effective management of exposure to biological hazards and risks in the working environment, including emerging or re-emerging hazards and risks, and prevention, preparedness and response measures, such as plans and procedures, to deal with accidents and emergencies related to these hazards, considering workers' physical and mental health and well-being as well as, if appropriate, the need for support mechanisms for employers;
- (d) the impact of climate and environmental risks on exposure to biological hazards in the working environment and the need to take adequate action to prevent and address identified risks;
- (e) relevant provisions of the Occupational Safety and Health Convention, 1981 (No. 155), the Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187), and, as appropriate, other relevant international labour standards;
- (f) the importance of ensuring, as appropriate, a perspective that considers all workers, including different levels of exposure and risk faced by women and men.

Article 5

With a view to obtaining the best available information on biological hazards in the working environment, each Member shall, in consultation with the most representative organizations of employers and workers, make arrangements, as appropriate and in accordance with national law and practice, for:

- (a) exchanging information and coordinating action, nationally and internationally, among relevant national authorities, including public health and occupational safety and health authorities, as well as scientific institutions and relevant international organizations;
- (b) promoting new research where the available information is insufficient.

Article 6

Each Member, after consultation with the most representative organizations of employers and workers, shall make special provisions to:

- (a) protect confidential information whose disclosure to a competitor would be liable to cause harm to an employer's business, so long as the safety and health of workers are not compromised thereby and in accordance with national law and practice;
- (b) ensure easy and confidential access for workers and their representatives to appropriate and effective reporting mechanisms to address any breach of national laws and regulations related to exposure to biological hazards in the working environment;
- (c) ensure that those who report such breaches are protected against retaliation.

III. Preventive and protective measures

Article 7

1. Each Member shall, in accordance with national law and practice, and in consultation with the most representative organizations of employers and workers, develop, make public and periodically review and update national arrangements and guidelines on preventive and protective and, as appropriate, precautionary measures for the control of biological hazards and risks in the working environment, based on the results of an evaluation of biological risks by the competent authorities.
2. These arrangements and guidelines shall:
 - (a) promote continuous improvement of the protection of the exposed workers;
 - (b) take into account emerging and re-emerging hazards and risks;
 - (c) make specific provision for:
 - (i) sectors and occupations where workers are at a high risk of recognized harm due to exposure to biological hazards;
 - (ii) workers who may require special protection, taking into account the need to ensure that this does not result in discrimination or contribute to occupational segregation;
 - (d) include preparedness and response measures, such as plans and procedures, to deal with accidents and emergencies related to exposure to biological hazards in the working environment.

Article 8

1. Each Member shall provide timely information and support to employers, workers and their representatives concerning preventive and protective and, as appropriate, precautionary measures for the control of biological hazards and risks in the working environment, based on an evaluation of biological risks by the competent authorities.
2. The information shall be provided in an accessible form and understandable language, be periodically reviewed, and be updated as necessary to reflect the latest scientific and technical knowledge.

IV. Occupational health and occupational health services

Article 9

In taking preventive and protective measures regarding exposure to biological hazards in the working environment, in accordance with national law and practice, each Member shall seek to:

- (a) progressively extend occupational health services to all workers in all branches of economic activity, prioritizing sectors and occupations where workers are at a high risk of exposure to biological hazards and workers who may require special protection;

- (b) facilitate the coordination and efficient use of national health and labour infrastructures, expertise and resources for the provision of occupational health services to workers.

V. Reporting, recording and notification of occupational accidents and occupational diseases and collection of data

Article 10

Each Member shall, in accordance with national conditions and practice and in consultation with the most representative organizations of employers and workers, establish, implement and periodically review procedures for:

- (a) the reporting, recording, notification and investigation of occupational accidents, occupational diseases and, as appropriate, dangerous occurrences, that are caused by exposure to biological hazards in the working environment, by the employer or any other person responsible in accordance with national law and practice;
- (b) the production and publication of annual statistics, disaggregated by sex, on occupational accidents, occupational diseases and, as appropriate, dangerous occurrences, that are caused by exposure to biological hazards in the working environment;
- (c) the holding of inquiries by the competent authorities for serious cases of occupational accidents, occupational diseases or any other injuries to health that are caused by exposure to biological hazards in the working environment;
- (d) the annual publication of information on measures taken under the national occupational safety and health policy that address exposure to biological hazards in the working environment;
- (e) the determination of the appropriate duration for maintaining records on occupational diseases and injuries that are caused by exposure to biological hazards in the working environment, taking into account the latency periods of such diseases.

Article 11

Each Member shall, in consultation with the most representative organizations of employers and workers and in accordance with national law and practice, relevant international standards and scientific developments:

- (a) periodically review the national lists of occupational diseases for the purposes of prevention, recording, notification and, if applicable, compensation;
- (b) update these lists as necessary to include any disease where a direct link between the exposure to biological hazards in the working environment and the disease is scientifically established, or determined by methods appropriate to national conditions and practice.

VI. Employment injury benefits

Article 12

Each Member shall ensure that any disease, injury, incapacity or death due to occupational exposure to biological hazards in the working environment shall give rise to an entitlement to employment injury benefits or compensation, in accordance with national law and practice.

VII. Compliance with laws and regulations

Article 13

1. Each Member shall ensure the enforcement of national laws and regulations concerning exposure to biological hazards in the working environment through an adequate and appropriate system of inspection and, where applicable, other mechanisms for ensuring compliance, including the supply of technical information and advice to employers, workers and their representatives, and shall allocate adequate resources and the support needed for these functions.

2. Each Member shall ensure that labour inspectors and, as appropriate, other officials with duties related to biological hazards and risks in the working environment:
 - (a) are trained on those hazards and risks;
 - (b) promote a systematic approach to occupational safety and health when assessing compliance with relevant national laws and regulations;
 - (c) have clear and robust safety protocols to ensure their personal safety while carrying out their duties;
 - (d) are provided with appropriate protective equipment by their employer.

Article 14

Each Member shall, in accordance with national law and practice, provide for adequate penalties and remedial measures for violations of the laws and regulations concerning biological hazards in the working environment and ensure their effective application.

VIII. Duties and responsibilities of employers

Article 15

Employers shall ensure that, so far as is reasonably practicable, the working environments under their control are without risk to safety and health due to exposure to biological hazards by taking the appropriate and necessary preventive and protective measures.

Article 16

Employers shall, consistent with national law and practice and applicable collective agreements, adopt preventive and protective measures as a result of an assessment of biological risks in the working environment so far as is reasonably practicable, ensuring, as appropriate, consideration of different levels of exposure and risk, including those faced by women and men. In particular, they shall:

- (a) establish, in consultation with workers and their representatives, adequate and appropriate systems to conduct, review and, where necessary, update assessments of the risks to the safety and health of workers arising from biological hazards, taking due account of workers who may require special protection;
- (b) take all reasonable and practicable measures to eliminate the biological hazards in the working environment, or when not possible, control and minimize the risks due to those hazards, taking due account of the hierarchy of controls;
- (c) implement effective preventive and protective measures, taking into account the characteristics of the biological hazards and, if available, the evaluation of biological risks by the competent authorities;
- (d) provide, maintain and replace, as necessary, at no cost to the workers, adequate personal protective equipment according to the hierarchy of controls, together with training for its use;
- (e) conduct regular surveillance of the working environment and of workers' health that is adequate and appropriate to the occupational risks to ensure the early detection of biological hazards and their potential impacts;
- (f) supervise work processes and regularly review the effectiveness of preventive, protective and control measures, including the availability of appropriate personal protective equipment;
- (g) take precautionary measures where the available information is insufficient to adequately assess the risks;
- (h) provide information, instructions and training on biological hazards in the working environment and on applicable preventive and protective measures to managers, supervisors and workers on paid work time and, where possible, during usual working hours, as well as workers' representatives, at suitable and regular intervals;

- (i) ensure that all workers are suitably informed, in an accessible form and understandable language, of the risks due to exposure to biological hazards and of the applicable preventive and protective measures before they start any tasks involving such risks, when there are changes to working methods, to materials or to the risk assessment based on new information and, as necessary, at regular intervals;
- (j) investigate occupational accidents, occupational diseases and, as appropriate, dangerous occurrences related to exposure to biological hazards in the working environment in order to identify their causes and take the necessary measures to prevent recurrence of similar events, in cooperation with occupational safety and health committees or workers' representatives, while retaining data related to incidents involving biological hazards.

Article 17

Whenever two or more employers engage in activities simultaneously at one workplace, they shall collaborate on how to ensure workers' safety and health in relation to exposure to biological hazards in the working environment, without prejudice to the responsibility of each employer for its workers.

Article 18

Employers shall establish preparedness and response plans and procedures, according to the size and nature of their activities, to deal with accidents, incidents and emergencies related to biological hazards in the working environment, taking into account outbreaks of communicable diseases. These plans and procedures shall be consistent with the guidance provided by the competent authorities.

IX. Rights and duties of workers and their representatives

Article 19

With respect to biological hazards in the working environment, workers and, if applicable, their representatives shall have the right to:

- (a) be consulted on the identification of biological hazards and risk assessments conducted by the employer or the competent authorities;
- (b) receive information and training on biological hazards and risks in the working environment and on appropriate preventive and protective measures and their application;
- (c) be consulted on preventive and protective measures to protect themselves and other workers and be involved in their implementation;
- (d) enquire into and be consulted by the employer on relevant aspects related to exposure to biological hazards in the working environment;
- (e) participate in investigations of occupational accidents, occupational diseases and, as appropriate, dangerous occurrences and be consulted about the conclusions of these investigations;
- (f) receive reports on surveillance of workers' health, subject to confidentiality rules for personal and medical data;
- (g) appeal to the competent authorities, in accordance with national law and practice, if they consider that the measures adopted and the means used are not sufficiently effective to ensure adequate prevention and protection;
- (h) in accordance with national law and practice, be transferred to alternative work, upon the recommendation of the occupational health services, when continued employment in a particular job is contraindicated for health reasons, provided that such work is available and that they have the qualifications or can be trained for such work;

- (i) receive medical treatment and rehabilitation, in accordance with national law and practice, in the event of an illness, disease or injury caused or exacerbated by exposure to biological hazards in the working environment;
- (j) be protected against any discrimination on account of contracting or transmitting a disease caused by exposure to biological hazards;
- (k) be provided with effective communication channels with the competent authorities for reporting occupational safety and health issues related to biological hazards and risks.

Article 20

There shall be arrangements at the level of the undertaking under which, with respect to biological hazards in the working environment, workers shall have duties that include:

- (a) complying, in accordance with the instructions received, and the training and means provided by their employer, with occupational safety and health measures prescribed, including the proper handling and use of adequate personal protective equipment, facilities and other equipment made available to them for this purpose;
- (b) reporting promptly to their direct supervisor any working situation which they believe could cause exposure to a biological hazard or present a risk for their safety or health or for the safety or health of others;
- (c) cooperating with their employer and other workers to adequately identify and implement occupational safety and health measures addressing biological hazards.

Article 21

With respect to biological hazards in the working environment, in addition to the rights and duties set out above, workers:

- (a) shall have the right to remove themselves from a work situation without undue consequences, where they have reasonable justification to believe that there is an imminent and serious danger to their life or health;
- (b) shall report without delay to their direct supervisor any work situation which they have reasonable justification to believe presents an imminent and serious danger to their life or health;
- (c) may not be required by their employer to return to a work situation where there is continuing imminent and serious danger to life or health until the employer has taken effective remedial action, if necessary.

X. Methods of application

Article 22

Each Member shall give effect to the provisions of this Convention, in consultation with the most representative organizations of employers and workers, through laws and regulations as well as through collective agreements or any other measures consistent with national conditions and practice.

XI. Normative language

Article 23

For the purposes of this Convention, any use of the generic masculine form shall be construed as non-exclusive and including also women, unless the context clearly indicates otherwise.

XII. Final provisions

Article 24

The formal ratifications of this Convention shall be communicated to the Director-General of the International Labour Office for registration.

Article 25

1. This Convention shall be binding only upon those Members of the International Labour Organization whose ratifications have been registered with the Director-General of the International Labour Office.
2. It shall come into force twelve months after the date on which the ratifications of two Members have been registered with the Director-General.
3. Thereafter, this Convention shall come into force for any Member twelve months after the date on which its ratification is registered.

Article 26

1. A Member which has ratified this Convention may denounce it after the expiration of ten years from the date on which the Convention first comes into force, by an act communicated to the Director-General of the International Labour Office for registration. Such denunciation shall not take effect until one year after the date on which it is registered.
2. Each Member which has ratified this Convention and which does not, within the year following the expiration of the period of ten years mentioned in the preceding paragraph, exercise the right of denunciation provided for in this Article, will be bound for another period of ten years and, thereafter, may denounce this Convention within the first year of each new period of ten years under the terms provided for in this Article.

Article 27

1. The Director-General of the International Labour Office shall notify all Members of the International Labour Organization of the registration of all ratifications, declarations and denunciations that have been communicated by the Members of the Organization.
2. When notifying the Members of the Organization of the registration of the last of the ratifications required for entry into force that has been communicated, the Director-General shall draw the attention of the Members of the Organization to the date upon which the Convention will come into force.

Article 28

The Director-General of the International Labour Office shall communicate to the Secretary General of the United Nations for registration in accordance with Article 102 of the Charter of the United Nations full particulars of all ratifications, declarations and denunciations that have been registered in accordance with the provisions of the preceding Articles.

Article 29

At such times as it may consider necessary, the Governing Body of the International Labour Office shall present to the General Conference a report on the working of this Convention and shall examine the desirability of placing on the agenda of the Conference the question of its revision.

Article 30

1. Should the Conference adopt a new Convention revising this Convention, then, unless the new Convention otherwise provides:
 - (a) the ratification by a Member of the new revising Convention shall ipso jure involve the immediate denunciation of this Convention, notwithstanding the provisions of Article 26 above, if and when the new revising Convention shall have come into force;
 - (b) as from the date when the new revising Convention comes into force, this Convention shall cease to be open to ratification by the Members.
2. This Convention shall in any case remain in force in its actual form and content for those Members which have ratified it but have not ratified the revising Convention.

Article 31

The English, French and Spanish versions of the text of this Convention are equally authoritative.

▶ Texts adopted

International Labour Conference – 113th Session, Geneva, 2025

Recommendation concerning prevention and protection against biological hazards in the working environment

(13 June 2025)

The General Conference of the International Labour Organization,

Having been convened in Geneva by the Governing Body of the International Labour Office, and having met at its 113th Session on 2 June 2025,

Having decided upon the adoption of certain proposals with regard to protection against biological hazards in the working environment, which is the fourth item on the agenda of the session,

Having determined that these proposals shall take the form of a Recommendation supplementing the Biological Hazards in the Working Environment Convention, 2025,

adopts this 13 June 2025 the following Recommendation, which may be cited as the Biological Hazards in the Working Environment Recommendation, 2025:

1. The provisions of this Recommendation supplement those of the Biological Hazards in the Working Environment Convention, 2025 (“the Convention”), and should be considered in conjunction with them.

XIII. Definitions and scope

2. With reference to the definition contained in Article 1(a) of the Convention, biological hazards include:
 - (a) pathogenic microorganisms and their associated toxins and allergens, including certain protozoa, bacteria, fungi, oomycetes and algae;
 - (b) cells and cell cultures, including both primary cultures and immortalized cell lines, that may be contaminated with other biological hazards or carry inherent risks such as tumour inducing potential, toxins or allergens;
 - (c) endoparasites, namely protozoa and helminths;
 - (d) non-cellular microbiological entities, including viruses, prions and recombinant, genetically modified or synthetic DNA and RNA materials;

- (e) irritants, allergens and toxins of animal or plant origin, including any venom or allergen containing secretions produced by animals or plants, with the exception of pollen, that may cause irritation, allergic reactions or systemic toxicity upon exposure via bites, stings or any other event resulting in the release or presence of these substances.
3. Harm to human health caused by exposure to biological hazards in the working environment includes:
- (a) infectious diseases such as brucellosis, viral hepatitis, human immunodeficiency virus disease, tetanus, tuberculosis, anthrax and leptospirosis, including health effects secondary to acute or chronic infection, such as liver disease secondary to viral hepatitis, and their sequelae;
 - (b) non-infectious diseases such as toxic or inflammatory syndromes associated with bacterial or fungal allergens or toxins;
 - (c) death or any personal injury or disease resulting from an occupational accident involving exposure to a biological hazard in the working environment.
4. Health not only indicates the absence of disease or infirmity but also includes the physical and mental elements affecting health which are directly related to safety and health at work.
5. The modes of transmission mentioned in Article 1(b) of the Convention include:
- (a) transmission through the air, which involves the biological hazards travelling through or being suspended in the air;
 - (b) direct transmission, which involves living organisms, including humans and animals, that transmit a biological hazard through direct contact;
 - (c) indirect transmission, which occurs via vectors and other transmitters such as water, food, organic materials, bodily fluids or fomites.
6. The routes of exposure mentioned in Article 1(b) of the Convention include inhalation, ingestion, percutaneous injury and eye, skin and mucous membrane absorption or adsorption. These routes are usually dependent upon the characteristics of the biological hazard and the working environment.
7. To the greatest extent possible, the provisions of the Convention and this Recommendation should be applied to all branches of economic activity and to all categories of workers. Provision could be made for such measures as may be necessary and practicable to give self-employed persons protection analogous to that provided for in the Convention and this Recommendation.

XIV. Preventive and protective measures

8. Members should take measures, in accordance with national law and practice, with a view to ensuring that those who design, manufacture, import, provide or transfer biological substances, agents or products to which workers could be exposed in the course of their work:
- (a) satisfy themselves that, so far as is reasonably practicable, such substances, agents or products do not entail dangers for the safety and health of those using them correctly;
 - (b) make available information concerning the correct use and hazardous properties of such substances, agents or products, including in the form of safety and health information sheets if such are available, as well as instructions on preventing known risks;
 - (c) undertake studies and research or otherwise keep abreast of the scientific and technical knowledge necessary to comply with clauses (a) and (b);
 - (d) take into consideration the United Nations Recommendations on the Transport of Dangerous Goods, the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, the Cartagena Protocol on Biosafety to the Convention on Biological Diversity, the Convention on the Prohibition of the Development, Production and

Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction, the International Health Regulations or any other relevant and applicable convention or instrument.

9. The national arrangements and guidelines referred to in Article 7(1) of the Convention should:
- (a) contain provisions on:
 - (i) carrying out a risk assessment and regularly reviewing it;
 - (ii) preventive and protective measures following the hierarchy of controls; (iii) hygiene;
 - (iv) information and training of workers;
 - (v) consultation and participation of workers and their representatives for the matters under (i) to (iv);
 - (b) address, as appropriate, infection prevention and control measures, risk-based biosecurity and biosafety control measures such as levels of containment in laboratories, ventilation, vector control, decontamination and disinfection procedures, as well as risk-based procedures for handling and disposing of hazardous waste;
 - (c) consider uncertainties regarding the presence of biological hazards in living organisms, vectors or other potential transmitters;
 - (d) be adequate and proportionate to the level of risk of exposure in each sector or occupation and to the hazards identified and risks assessed by the competent authorities.
10. The sectors and occupations referred to in Article 7(2)(c)(i) of the Convention to be included in an evaluation of risks could include, but not be limited to:
- (a) the healthcare sector;
 - (b) food production and agricultural work, including in the animal, vegetable and grain sectors;
 - (c) the water and waste management sector;
 - (d) cleaning and maintenance work;
 - (e) humanitarian work;
 - (f) laboratory work;
 - (g) the biotechnology and pharmaceutical sectors;
 - (h) funeral services and mortuary work;
 - (i) the construction sector;
 - (j) the forestry sector;
 - (k) the transport sector;
 - (l) occupations that are critical to the functioning of society and its well-being during public health emergencies, as determined by an evaluation of biological risks by the competent authorities.
11. The workers referred to in Article 7(2)(c)(ii) of the Convention should include:
- (a) pregnant and breastfeeding women;
 - (b) young workers;
 - (c) older workers;
 - (d) workers with disabilities;
 - (e) workers medically predisposed to infections or allergies, including immunocompromised workers;
 - (f) workers in need of protection due to their social situation and multiple disadvantages; (g) migrant workers.

12. The preparedness and response measures, such as plans and procedures, to be established under Article 7(2)(d) of the Convention should include:
- (a) the preparation or updating of regulations for the management of accidents and emergencies;
 - (b) detection and early warning systems;
 - (c) measures to be taken in the working environment in the event of outbreaks, epidemics or pandemics, including support for workers and employers in case of isolation and quarantine orders;
 - (d) coordination and information mechanisms with public health authorities;
 - (e) national and international collaboration on research;
 - (f) provision for appropriate emergency human resources, including surge capacity and flexible resource allocation;
 - (g) the effective operation of healthcare facilities and essential services;
 - (h) material preparedness;
 - (i) collaboration between relevant national and international public health, water and waste management, environmental health, occupational health and veterinary health authorities, labour inspectorates and other relevant experts and partners;
 - (j) rapid public health response systems and real-time communication of expert advice to prepare for and manage outbreaks;
 - (k) training of occupational health service providers on potential biological hazards, supported by clinical or laboratory-based surveillance.
13. When developing arrangements and guidelines for the management of occupational safety and health regarding biological hazards in the working environment, Members should take due account of relevant internationally agreed technical and practical guidance developed by the International Labour Organization and other competent organizations and promote a management systems approach to occupational safety and health, such as the approach set out in the Guidelines on occupational safety and health management systems (ILO–OSH 2001).
14. Members may consider various approaches to specify appropriate and proportionate risk control measures, which may include regulations, policies or guidelines for work involving certain types of biological hazards and the classification of biological hazards into risk or hazard groups based on characteristics and epidemiological profiles.
15. Recognizing that many biological hazards create cross-border risks, Members should encourage both national and multinational employers to provide adequate occupational safety and health conditions and contribute to a preventive culture to eliminate hazards or minimize these risks.

XV. Social and employment protection

16. In applying Article 12 of the Convention, Members should take due account, as appropriate, of the Social Security (Minimum Standards) Convention, 1952 (No. 102), the Employment Injury Benefits Convention, 1964 [Schedule I amended in 1980] (No. 121), the Employment Injury Benefits Recommendation, 1964 (No. 121), the List of Occupational Diseases Recommendation, 2002 (No. 194), other relevant instruments and subsequent amendments and revisions.
17. Members should, in accordance with national circumstances, endeavour to provide access to basic income security, as well as measures for business continuity, during periods of isolation or quarantine.
18. Members should endeavour to provide, as appropriate, protection from dismissal if, while complying with monitoring, travel restrictions, quarantine or isolation orders, or for related preventive or curative treatments, workers have to be absent from work.

XVI. Compliance with laws and regulations

19. The system of inspection provided for in Article 13 of the Convention should be guided by the provisions of the Labour Inspection Convention, 1947 (No. 81), and the Labour Inspection (Agriculture) Convention, 1969 (No. 129), without prejudice to the obligations thereunder of Members which have ratified these instruments.

XVII. Duties and responsibilities of employers

20. In taking the preventive and protective measures that are their responsibility pursuant to Article 15 of the Convention, employers should take due account of relevant instruments, codes of practice and guidelines, including the Occupational Safety and Health Recommendation, 1981 (No. 164), the Promotional Framework for Occupational Safety and Health Recommendation, 2006 (No. 197), the Guidelines on occupational safety and health management systems (ILO–OSH 2001), the Technical guidelines on biological hazards in the working environment and other relevant subsequent guidance adopted by the International Labour Organization.
21. In applying the hierarchy of controls referred to in Article 16(b) of the Convention, employers should take into account the Technical guidelines on biological hazards in the working environment and other relevant subsequent guidance adopted by the International Labour Organization.
22. The preparedness and response plans and procedures referred to in Article 18 of the Convention should include:
 - (a) the preparation or updating of workplace policies and guidelines on the management of emergencies related to biological hazards, taking into account possible public health impacts;
 - (b) the provision of appropriate and adequate preventive measures, in accordance with national law and practice and on the basis of a risk assessment, which could include the facilitation of vaccination, immunization, chemoprophylaxis and testing to all workers free of charge and on a voluntary basis.

XVIII. Effect on an earlier Recommendation

23. This Recommendation supersedes the Anthrax Prevention Recommendation, 1919 (No. 3).