ERA-Covid19: risk assessment related to the epidemic of Covid-19

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Why assessing risks

- The **authors of this protocol will not cover any aspect related to the obligatoriness** of the risk assessment, which depends on local legislation and is evolving
- From a **methodological point of view**, the risk assessment is a proper **step in the risk management**
- EU-OSHA (2020) and ILO (2020) remark the importance of risk assessment for health and safety following Covid-19 emergency

References to the legislation

- This protocol is **internationally oriented**, meaning that **it was not tailored to a specific legislation**. Hence, it is intentionally flexible to international norms or future changes in current norms
- It is upon the risk assessor **to assess and examine the specific legislative framework** of the state (or the states) in which the risk assessment is carried out. The assessor shall also implement the protocol in accordance with applicable laws
- Such choice is especially suitable in the light of the evolution of context and scientific knowledge

Protocol features

- The protocol lays out the **methodological process** for assessing risks posed by the Covid-19 epidemic
- The objective is to promote risk assessments for health and safety considering the current epidemic by providing a process that:
  - is **straightforward**
  - **follows scientific knowledge** and its development thoroughly
  - is **compliant with the most recent international standards** of risk management and assessment
  - is **adaptable** to different **national legislations**

References to the highest international standards

- The protocol was designed in accordance with:
  - **ISO 31000:2018** “Risk management - Guidelines”
  - **EN IEC 31010:2019** “Risk management – Risk assessment techniques”
  - **ISO 45001:2018** “Occupational health and safety management systems — Requirements with guidance for use”

The protocol can also be used in organizations which do not adopt a health and safety management system pursuant to ISO 45001:2018, or which do not adopt risk management practices based on the above-mentioned norms

Which risks are being assessed?

- The protocol provides for the assessment of the following risks:
  - **Biological risk** posed by exposure to Covid-19
  - Identification and assessment of other **non-biological factors** arising from Covid-19 epidemic:
    - **Ergonomic risks** due to smart working
    - **Psychosocial risks** associated to current changed working situation
    - Risks deriving from a **poor change management**

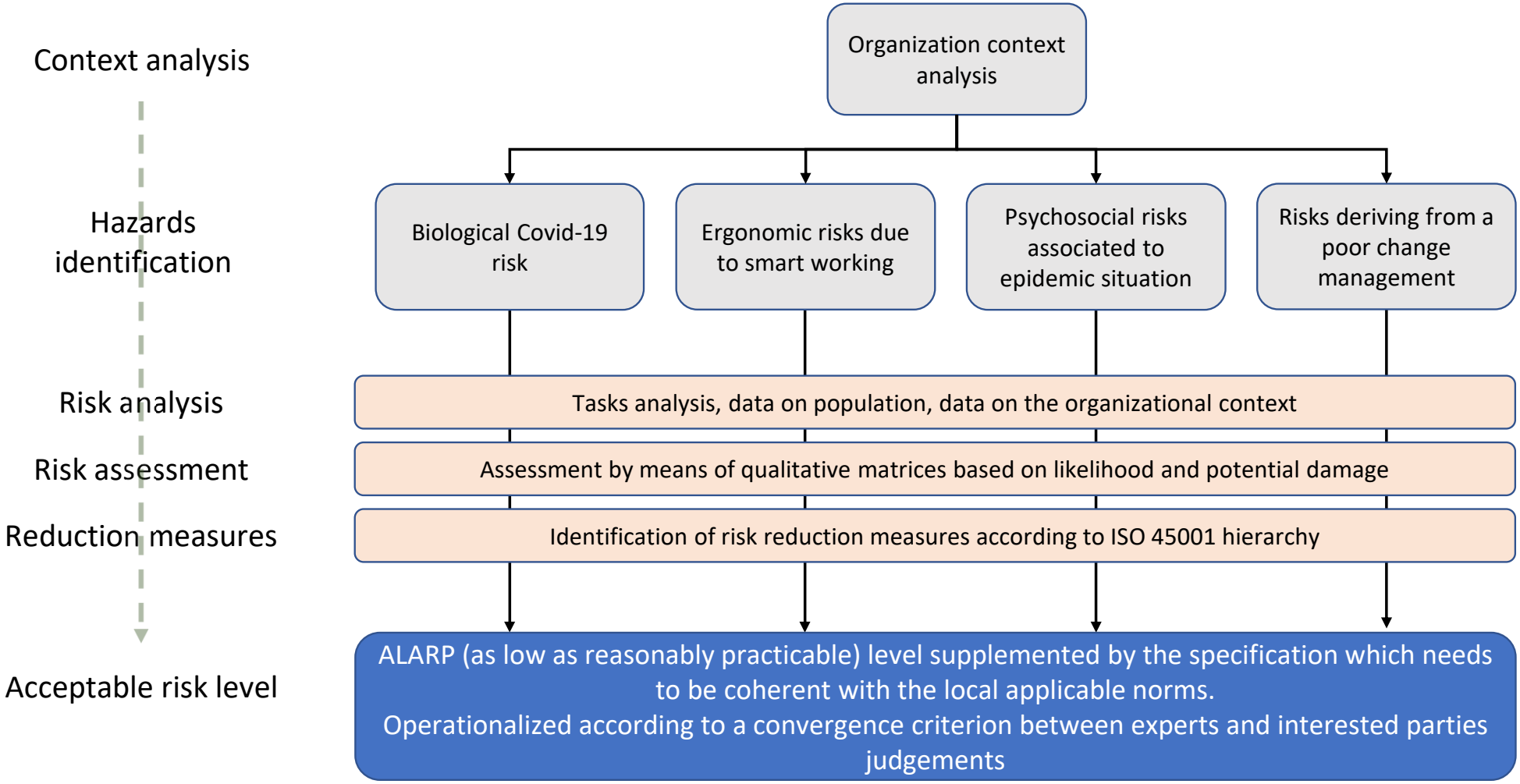

Fig. 1 – Visualization of the risk assessment process for the risks arising from the Covid-19 epidemic (Bisio, Campanini, Santucci)

Scales of likelihood, of damage, of risk

- The risk matrix, for each of the considered risks, considers two dimensions: **likelihood** and **damage**
- The **risk level** corresponds to the joint consideration of both variables. It is qualitative and measured on an ordinal scale

Qualitative risk assessment is considered in the point 6.3.5 of the standard EN IEC 31010 :2019, and is very commonly used in the professional practice

High likelihood			
Medium likelihood			
Low likelihood			
	Low damage	*Medium damage*	*High damage*

Evaluation processes: features

- Each of the described assessment processes **shall be performed**:
  - pursuant to **locally applicable laws** and regulations
  - with consistent **leadership supporting** risk management process
  - with a proper **level of engagement** of workers or their representatives, as well as the different internal positions involved
  - guaranteeing an **adequate amount of skills and resources**

Risk reduction: to what extent?

- In accordance with ISO 45001:2018 the **ALARP** level (as low as reasonably practicable) is adopted as an **acceptability criterion** by integrating locally applicable norms
- Such level is **operationalized** following a procedure in line with **EN IEC 31010:2019** “Risk management -- Risk assessment techniques”, based on experts and interest parties' judgements

Biological risk posed on Covid – Likelihood and damage

Variables of likelihood:

The likelihood scale arises from a joint consideration of the following variables:

1. *Proximity*: to what extent the task demands people to be close to each other
2. *Aggregation*: to what extent the task requires being in crowded spaces
3. *Contact*: when the task requires interacting with infected people or potentially infected biological matter

Potential damage variables:

The damage scale arises from a joint consideration of the following variables:

1. *Vulnerability* of the reference population (a higher vulnerability generates a potential for greater damage)
2. *Possibility of transmission* from one subject to others (how many different people can this subject interact with, including third parties, and to what extent they are vulnerable)

Covid biological risk – Reduction measures

ISO 45001:2018 hierarchy of measures is followed by integrating an additional category

Measures categories	Examples
Removing the hazard at source	Avoiding travels or other dangerous activities
Substituting with less dangerous tasks or processes	Substitution of certain processes with others which reduce the probability of infection
Technical and design measures and work re-organization	Workspaces management
Administrative measures, including training	Information and training
Use of PPEs	Use of PPEs, such as face masks
Damage mitigation	Health surveillance and vulnerable workers safeguard

Ergonomic risks due to smart working

- A **questionnaire** directed to smart working employees is used to gather data on the suitability of the workstations and postures
  - The **likelihood** of the damage is proportional to the presence of risk factors (i.e. awkward postures or movements) and to the length of exposure to those factors
  - The **potential seriousness of the damage** is due to traits which make some subjects more vulnerable

The results will be reported both to the Occupational Health Physician and to those subjects which are directly affected, so that they can improve their working conditions and monitor the health status

Ergonomic risks due to smart working: measures

ISO 45001:2018 hierarchy of measures is followed by integrating an additional category

Measures categories	Examples
Removing the hazard at source	Avoiding specific equipment
Substituting with less dangerous tasks or processes	Substituting a type of chair or other equipment
Technical and design measures and work re-organization	Workstation re-arrangement
Administrative measures, including training	Work schedule management
Use of PPEs	N/A
Damage mitigation	Health surveillance and vulnerable workers safeguard

Psychosocial risks associated to current changed working situation

- A specific **assessment of psychosocial factors for the epidemic** is provided, which can integrate an ongoing psychosocial risk assessment but not substitute it, since several factors not arising from Covid-19 emergencies are not considered
- The factors which are most likely to have changed following the epidemic emergency are examined
- Data gathering is based on a **checklist** for the likelihood, and a **questionnaire** for the seriousness

Psychosocial risks - measures

- Measures will be adopted based on the risk assessment results and on the hierarchy of controls in the ISO 45001, considering also the following hierarchy

Measure categories	Examples
Primary prevention	Changes to workspaces or to the organization of work
Secondary prevention	Training on managing stressing situations
Tertiary prevention	Psychological support

Risks arising from a poor change management

- Changes can arise from exogenous and endogenous factors to the organization:
  - **examples of exogenous factors**: changes in the working hours due to shifts in the demand; difficulty in maintenance due to the lack of maintenance services or spare parts
  - **examples of endogenous factors**: increase in smart working hours; different layout management; different needs of communication and training

Risks arising from changes: consequences

- **Scenarios** are varied, and some consequences could be:
  - on the presence of stress factors or of organizational support
  - on the exposure to biomechanical ergonomic factors
  - on the ability of managing operational situations with possible incidents as consequences
  - on the ability of managing the process safety with possible incidents as consequences

Risks arising from changes: risk matrix and measures

- The risk matrix is based on the **likelihood** of damage, on the **treatment ability** of emerging hazards, and on the **potential damage seriousness** on existing conditions
- The risk matrix is based on the combination of likelihood and damage for each of the identified uncertainty factors
- Measures are then defined according to ISO 45001:2018 hierarchy

The authors

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Main references

- EN IEC 31010:2019 “Risk management -- Risk assessment techniques”
- EU-OSHA, ‘COVID-19: back to the workplace in safe and healthy conditions’, 2020
- ILO, Prevention and Mitigation of Covid-19 at Work – Action checklist, 2020www.iss.it
- ISO 31000:2018 “Risk management - Guidelines”
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