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# Implementation of a risk-based plan for the control and management of COVID-19 outbreaks in meat and cutting plants: ad interim methodological approach

Version of April 8, 2021

**ENGLISH VERSION**



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## **Istituto Superiore di Sanità**

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(June 2021)

Istituto Superiore di Sanità

**Set up of a risk-oriented plan for the control and management of COVID-19 outbreaks in meat plants: ad interim methodological approach. Version of April 8, 2021.**

Umberto Agrimi, Luigi Bertinato, Gianfranco Brambilla, Giada Minelli, Gaetano Settimo, Silvio Brusaferrero, Adelina Brusco, Silvia D'Amario, Fabio Boccuni, Bruna Maria Rondinone, Paola Tomao, Nicoletta Vonesch, Sergio Iavicoli, Giorgio Di Leone, Sara De Nitto, Flavio Napolano, Letizia Rizzo, Domenico Lagravinese, Nicoletta Cornaggia, Simona Savi, Francesca Russo 2021, ii, 50 p. Rapporto ISS COVID-19 n. 8/2021 - English version

There is the scientific evidence that industrial meat plants represented a major issue for COVID-19 outbreaks in working place, due to environmental, structural, and management factors. This report illustrates a risk-oriented prevention plan at national/regional/province level, accounting for the official Italian Ministry of Health register of about 6,700 slaughterhouses and meat-cutting plants. Such plan has been promoted by the "Inter-regional technical group on safety and health in the working places", under the frame of the "Conference of Regions and Autonomous Provinces - Health Commission, Inter-regional co-ordination on Prevention", with the technical support of the Istituto Superiore di Sanità (ISS, the National Health Institute in Italy), the Istituto Nazionale Assicurazione Infortuni sul Lavoro (INAIL, the National Institute for Insurance against Accidents at Work) and of the Department of Prevention of the Local Health Unit (Azienda Sanitaria Locale, ASL) of Bari (Italy). Three synergic working documents have been defined: a) a self-monitoring check-list addressed on voluntary basis to the business operators; b) an audit check-list for the public health operators of the Prevention Departments of the Local Health Unit; c) a questionnaire regarding how COVID-19 outbreaks have been managed.

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The responsibility for scientific and technical data lies with the authors, who declare that they do not have any conflict of interest.

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## List of abbreviations

<b>ASL</b>	<i>Azienda Sanitaria Locale</i> (Local Health Unit)
<b>ATECO</b>	<i>Attività Economica</i> (Economic Activity Classification)
<b>CIP</b>	<i>Coordinamento Interregionale Prevenzione</i> (Interregional Coordination of Prevention)
<b>CP</b>	<i>Classificazione Professioni</i> (Professional Jobs Classification)
<b>ECDC</b>	European Centre for Disease Control and prevention
<b>FBO</b>	Food Business Operator
<b>GTI</b>	<i>Gruppo Tecnico Inter-regionale</i> (Interregional technical group)
<b>INAIL</b>	Istituto Nazionale Assicurazione Infortuni sul Lavoro (National Institute for Insurance against Accidents at Work – Italian Workers' Compensation Authority)
<b>ISS</b>	Istituto Superiore di Sanità (the National Institute of Health in Italy)
<b>ISTAT</b>	Istituto Nazionale di Statistica (Italian National Institute of Statistics)
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>PPE</b>	Personal Protective Equipment
<b>SOC</b>	Standard Occupational Classification
<b>UN</b>	United Nations
<b>WTO</b>	World Trade Organization

# Introduction

During the various COVID-19 pandemic waves, the economic activities related to the food supply chain have been declared as “essential services”: they were allowed to remain open, while other “non-essential” services were locked down. The decision has been taken to sustain the food supply chain and to guarantee food security to the population, bearing in mind that animals from intensive farming systems, especially pigs and broilers, hardly could support a delay in the slaughtering time, without animal welfare and animal health problems at the farm (1, 2).

This has led to relevant clusters of COVID-19 being reported in meat plants from different countries over the world, which turned out to be more striking for those plants with the highest labour force (from 5,000 up to >15,000 FBOs), work shifts over 2-3 different working-times, and with the recruitment of seasonal Food Business Operators (FBOs) from other regions and countries (3).

Globally, the first report, highlighting the outbreaks occurring in meat plants, has been published by the Centers for Disease Control and Prevention (Atlanta, US), that through two different reports in May and July 2020 (4, 5) had described the SARS-CoV-2 prevalence in the Northern American meat plants FBOs, thus highlighting the socio-economic and management factors facilitating the spread of the virus. Following that, guidelines have been set up to prevent the spreading of the COVID-19, with a special focus on the transport system to and from the meat plant (pool cars and vans), and to the shared places such as canteens, lockers, entrance and exit lounges. In Germany, the Robert Koch Institute, in charge of the COVID-19 surveillance, since the end of April 2020, highlighted in its daily COVID-19 reporting (6), the presence of relevant outbreaks in the German Landers (Osnabrück, Straubing/Straubing-Bogen, Coesfeld, Sonneberg) with large meat and processing plants (5000-15,000 FBOs in each plant) exporting pig meat to China. The German colleagues (7) focused mainly on the specific features of that large meat plants, whereas aerosol generation at the chilling temperature allow the spreading of the virus at a distance of up to 8 meters and the virus may persist on the working surfaces. The European Federation of Food, Agriculture, and Tourism Trade Unions (EFFAT) in a July 2020 report (8) stressed how the socio-economic factors had facilitated the contagion in large meat plants recruiting low-salary FBOs. In some cases, for FBOs coming from abroad, the EFFAT raised the “salary dumping” phenomenon, where workers were housed in high-density collective accommodations. At the European level, some other European countries (Ireland, the Netherlands, France, Spain) reported outbreaks in meat plants. The European Centre for Disease Prevention and Control (ECDC), in August 2020 report (9), based on data collected by 14 EU Member States, reported 153 clusters connected to food chain activities, with 3.856 confirmed cases, 4 deaths, and a range from 2-217 cases per cluster. In Brazil, rough estimates indicated a 25% of the poultry meat plant FBOs affected, while Australia, which experienced some outbreaks in meat plants, decided to stop exporting meat to China (10)

From an epidemiological surveillance perspective, clusters occurred in the US large meat plants and the German Länders, have led to an increase of the COVID-19 incidence, and exactly in those regions where the meat plants are located; the genomic analysis of the viral isolates have shown the meat plants as primary infection sites, hence spreading the infection from meat plant FBOs to their relatives (11-14). Such source of secondary cases of infection deserves attention as new variants of the Coronavirus, like the B. 1.1.7, recently reported in a large meat plant in Ontario, Canada, can spread (supplementary information).

Last but not least, COVID-19 outbreaks in meat plants have affected the food commodities international trade. China, based on genetic detection of SARS-CoV-2 contaminating food commodities and the packaging materials, blocked some meat and fish products imports from third countries, including Italy,

causing a dispute within the World Trade Organization “Committee on Sanitary and Phytosanitary (SPS)” (Specific Trade Concerns, STCs).

The United States of America, Canada, Brazil, and the European Union objected that such measures were not justified: the potential presence of SARS-CoV-2 genetic material on the food surface was not associated with the evidence of infectious viral loads representing a public health risk (supplementary information).



# 1. Identification of the implementation control plan on the territory

## 1.1. Background for a risk-based control plan

The reported scientific evidence in the literature, combined with the occurrence of the increasing outbreaks both at meat and cutting plants, as for the first outbreak notified in April 2020 in the Apulia region (15) and recently followed by Lombardy, Campania, Abruzzo, Veneto, Tuscany regions and by the Autonomous Province of Trento (see supplementary information), have progressively led to the involvement of the regions and Autonomous Provinces health authorities, being them competent authorities (Constitutional Law of Italy). In this context, the interregional technical group on health and safety at work (GTI), the interregional coordination of preventive measures action (CIP), as part of the conference of the Regions and the Autonomous Province of Trento, have decided to promote a surveillance plan of all the related activities covered by the ATECO code 10.1 – meat and cutting plants – based on the outcomes of the preliminary study carried out by the Joint Working Group (ISS, INAIL and Local Health Unit of Bari). This working group, based on the outcomes from the very first case study that occurred in Italy, throughout webinars and proper checks, had already started an advocacy campaign on this issue at the national level, to better understand the risk factors and resilience capacity of the Italian meat supply chain. A flow chart, detailing the connection between the central and regional health & prevention bodies and the stakeholders, is outlined in Figure 1.

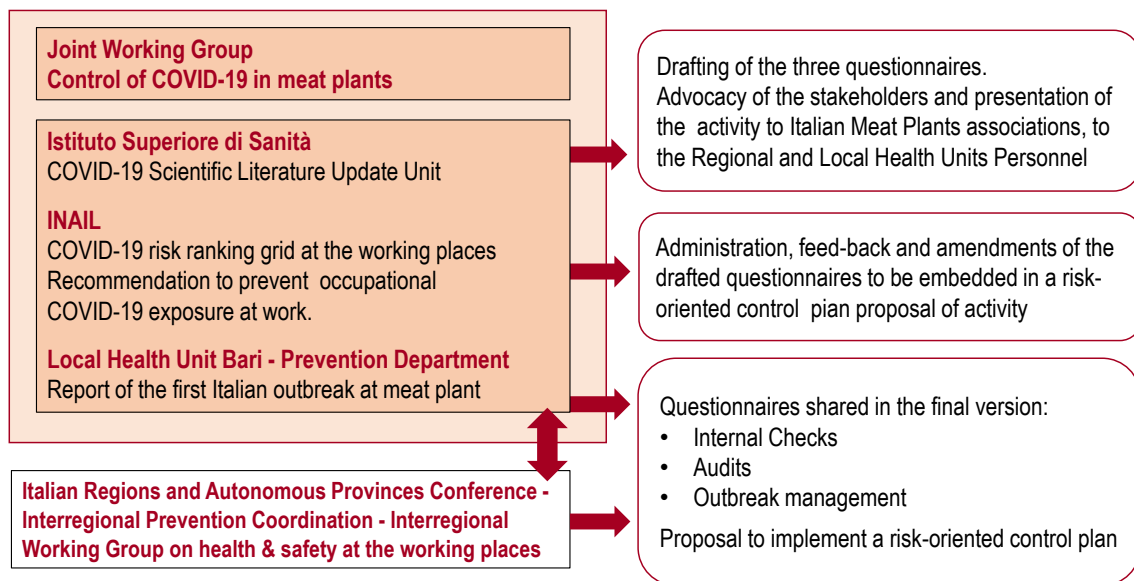


Figure 1. Logical frame leading to the implementation of a risk-based control plan

## 1.2. Risk-based control plan

The risk-based control plan, emphasized by the new National Plan for Prevention 2020-2024, represents the methodological approach aiming to implement measures for safety and health at work. Therefore, the GTI decided to follow the same approach, considering that the best option. As matter of fact, the risk-based control plan entails both scientific investigation, audits, checks, and technical assistance activities. Such activities fall under the duties and responsibilities of the Prevention Department of the Health Service Unit, over the national territory. In particular, the risk-based control plan aims to build up a dialogue between stakeholders, throughout

a preliminary advocacy action. Additionally, health and safety officers can prompt a pro-active engagement of the employer in each meat plant. The advocacy action consists of making stakeholders aware of the risk factors and the most effective preventive and mitigation available measures, to be tailored according to the specific situation of the meat plant (e.g., structure, management and environmental parameters). In terms of preparedness, it is worth noting that within the National Plan of Prevention 2020-2024, the risk-based control plan has been identified as a geo-referenced participative model of collaboration between health officers and the private sector well in advance before the first COVID-19 pandemic wave in Italy. Its implementation is not limited only to the meat sector, but it could be extended to all the food chain sector. Therefore, the legislative platform enabling its implementation is already available, allowing the opportunity for official recognition of such approach by the Standing Conference between the Italian Government, the regions and the Autonomous Provinces of Trento and Bolzano.

### 1.3. Operational framework

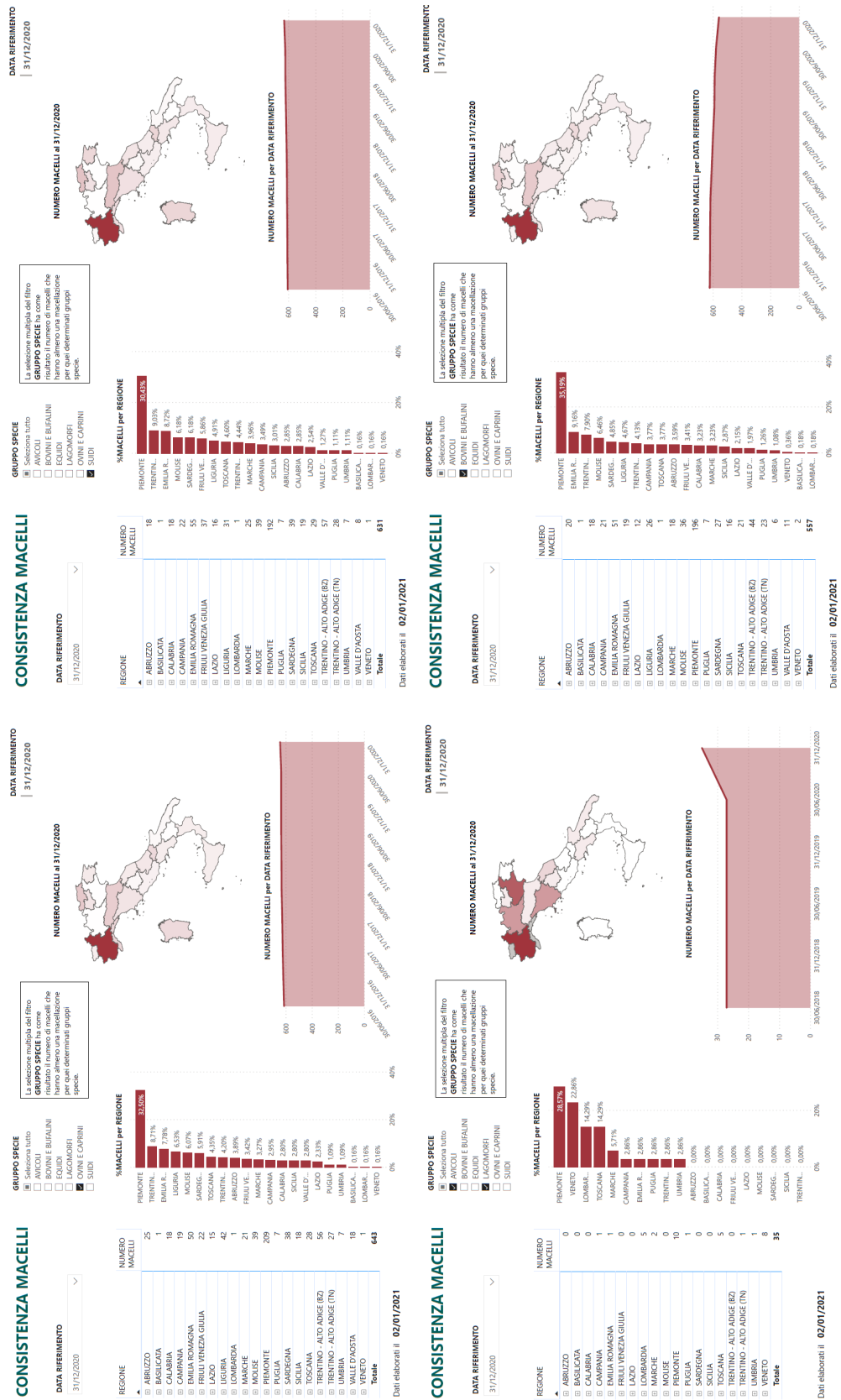
The Italian Veterinary Services are structured under the Prevention Department of the Local Health Units. Therefore, Local Health Units hold a record of all meat, cutting and processing plants, and are able to use the available regional and provincial database and the information flow generated by the Prevention Services and by the Veterinary Services. Such information and records provide the number of FBOs employed in each meat plant and the average number of livestock processed. To identify different businesses and differentiate between the relevant meat plants activities, reference is made to the ISTAT categorization of economic activities and the Economic Activity Code Grid – ATECO code 10.1 – that includes meat plants, cutting and processing plants. The official register of the ATECO Code 10.1 is openly accessible from the Italian Ministry of Health official website. Such register, available in .xls format, lists the authorization number for each meat plant, their main activity (meat, cutting or processing plant) and what kind of livestock (farm/wild). The number of meat and cutting plants officially authorized in Italy, under the Regulation (EC) 853/2004, accounts for around 700 meat plants for avian species and rabbits and 3400 establishments processing large and small ruminants, pigs, and horses. Generally, very few large meat plants (1-2% of the total – almost slaughtering one species – with a total FBOs number ranging from 500 to 2000) are mainly located in Northern Italy. Such meat plants are responsible for 70-90% of the total meat processing. Hence, it was necessary to understand whether the structure, size and extension of the meat plants across Italy was more resilient to the spreading of COVID-19 outbreaks amongst FBOs. Table 1 and Figure 2 show the available information and recorded data on the meat plants at the national and regional level.

**Table 1. Number of meat plants registered in the Ministry of Health database as to categories of slaughterhouses, cutting plants, for the main farmed species. The updated datasheet is available [here](#)\***

Meat plant	Livestock species	N	N <sub>R</sub>	%	% <sub>R</sub>
<b>Slaughterhouses</b>		2410			
	Avian species + lagomorphs	593		25	
	Poultry + lagomorphs		30		5
	Ungulates	1614		67	
	Pigs		288		18
	Bovines		129		8
	Other	203		8	
<b>Cutting plants</b>		4303			
	Avian species + lagomorphs	939		22	
	Poultry + lagomorphs		155		17
	Ungulates	2938		68	
	Pigs		363		12
	Bovines		43		1
	Other	426		10	

\* Due to the number of livestock species slaughtered/processed at the same plant, the number of authorizations might exceed the real number of plants in the area. However, every livestock species links to a specific risk category.

**Figure 2. Main slaughterhouses across Italy, in the different Region/Provinces, according to the different species processed: in clockwise order from the left to the upside right: small ruminants, pigs, large ruminants, poultry and lagomorphs.** Source: Banca Dati Nazionale - IZS Abruzzo e Molise



With such a large number of meat plants over the country, considering a probable over-representation requires the need to refine and tailor the methodological approach of the Prevention Department (already under pressure from the pandemic). The selection of food businesses at the local level can take place with the use of available information and with the collaboration of the Veterinary Services and trade unions. In this way, the setting up of a usable food businesses list will allow the setting up of tailor-made measures.

## **1.4. Stakeholders' engagement and timeline**

According to the National Prevention Plan 2020-2024, the stakeholders' engagement in the risk-based control plan requires an official preliminary introduction of the set of activities to the Regional/Province/Territory Coordination Committee (in compliance with article 7, Legislative Decree 81/2008 on the health and safety at the workplace). After such kick-off step, the appointed Health Authorities with the stakeholders will define:

- a) A road-map for the definition of the activities to be implemented within the timeframe;
- b) The way the results will be shared and discussed.

As stated above, the implementation at the local level of such a control plan relies on the priorities identified for the management of the pandemic.



## **2. Tools supporting the implementation of the risk-based control plan**

### **2.1. Occupational exposure to SARS-CoV-2: risk assessment by economic activity**

The National Institute for Insurance against Accidents at Work (INAIL) developed a methodology to assess and categorize the risk of SARS-CoV-2 infection in the workplace by economic sectors and based on the scientific evidence and available data. This approach has been adopted by the Italian Government (16) for an action-oriented policy to identify priorities and actions to manage the COVID-19 emergency, in particular for a safe reopening of the businesses after the May 2020 lockdown.

The integrated occupational risk index considers the likelihood to be in contact with potential sources of infection while performing work tasks (exposure) and the intrinsic features of those tasks that cannot guarantee a proper physical distancing (proximity). Survey-defined perception indicators have been used to quantify the proximity and exposure parameters, as indicated by the O\*Net survey (17) – based on the Standard Occupational Classification (SOC) from the US Department of Labor (18) – and adapted to the Italian system. The score resulting from this combination was adjusted by introducing a factor taking into account the aggregation scale, that is the condition linked to possible contacts with third parties during work performance. The final product of the exposure, proximity and aggregation scores, defines the risk level (R) for each activity divided into the following four categories: Low  $R < 2$ ; Medium-Low  $2 < R < 4$ ; Medium-High  $4 < R < 8$ ; High  $R > 8$  (19, 20).

The resulting risk category has been calculated for the first two digits of the Italian Classification of Economic Activities (ATECO code) (21), which is the equivalent of the European Classification of Economic Activities (NACE). The final risk category represents an average value for activities belonging to each of the ATECO classification (see Table 1 – Annex 1 Documento Tecnico INAIL, 2020) (19).

The risk by business/activity sector obtained with such methodology has been integrated into a retrospective analysis, reproducing the different scenarios of the National Strategy aiming to lift the containment measures and highlighting that the gradual reopening of the activities had not produced a significant additional impact of SARS-CoV-2 transmission during the post-lockdown phase (22).

In particular, for the meat sector, results highlighted a Low Risk for category C.10 – “Manufacture of food products”, even though, some activities in this category, show a higher risk category than the average value.

When considering the risk related to category C.10.1 - “Processing and preserving meat and production of meat products”, it reveals a risk category that varies depending on the type of the profession, and that shifts from Medium-Low, for the profession under the category 51-3022.00 – “Meat, Poultry, and Fish Cutters and Trimmers”, up to Medium-High for the profession under the category 51-3023.00 – “Slaughterers and meat packers”, which have been identified and based on the SOC (23).

Finally, the analysis of the workplace-related complaints received by the INAIL from March 2020 to May 2020, has shown that the distribution of the cases generated at work by economic sector/activity, was consistent with the proposed risk categorization (24).

## 2.2. COVID-19 workplace-related official complaints: data collection and analysis

Infectious and parasitic diseases, when contracted at the workplace, are listed by INAIL as “work-related diseases” and can be compensated, according to the principle equating the virulence of an infectious agent causing the disease to the violence of an agent causing an injury, even though when relevant effects are shown after a certain time (25, 26). All COVID-19 cases of infection at the workplace fall in such work-related disease according to INAIL. The employer takes action by complying with the provisions laid down in article 53 of the Decree of the President of the Italian Republic n. 1124/1965 and related amendments, thus submitting the official injury complaint along with a medical certificate. To obtain any INAIL compensation, it is required to attach the clinical diagnosis report attesting to the confirmation of the contagion (27, 28).

INAIL compensation concerns not only workers exposed to a high risk of contagion (e.g., healthcare workers or workers exposed to prolonged close contact to the public), but also those covered by insurance against occupational injuries, for which, through a health and administrative assessment, the traceability of the contagion needs to be verified (ongoing cases are also considered). INAIL compensation concerns also cases of contagion from new Coronavirus occurring on the way to and from the workplace.

The statistical data monitoring of COVID-19 contagions, as for all other occupational injuries, is based on the monthly number of official complaints received by INAIL. Therefore, an official complaint about an occupational injury to be valid needs to report the date of the event/contagion and the place of occurrence, while for those official complaints that led to death, they shall report the date of death and the place of occurrence (place of contagion). The analysis of the official complaints allows to get the main information about the COVID-19 contagions, in particular, all those relevant information about the FBOs (e.g., gender, age, profession), the place and time features of the event and the food business economic activity carried (the employer).

It is worth noticing that the COVID-19 occupational injuries submitted to INAIL, represent a subset of the data released by the National Institute of Health - ISS: when comparing data, caution is required as to the wider target audience identified by the ISS (around 51 million – entire Italian population) in respect to the audience identified by the INAIL (around 21 million of insured workers). Moreover, INAIL insurance excludes certain professionals particularly exposed to the risk of contagions, such as freelance doctors and general practitioners.

From the beginning of the pandemic until 31 January 2021, the COVID-19 occupational official injury complaints were almost 148,000: around 70%, were related to the health and social assistance sector. Regarding the food industry and all the related activities (ATECO code C 10.1), a total of 248 complaints were recorded. These complaints were very limited and recorded mainly in the Veneto region with over 6 cases out of 10, followed by the Lombardy region (18.1%) and Apulia region (6.5%). The most affected professions were artisans and workers specialized in food processing (ISTAT categorization CP 2011 6.5.1.1), accounting for 147 COVID-19-related injuries: these professionals were in particular meat processors (118 cases) and meatpackers (44 cases) (29).

Worth of notice is that the CP 2011 categorization of occupational injuries adopted by INAIL, when submitting official complaints, allows to include into the category of the artisans and specialized FBOs in food processing, all those professionals under the cat. SOC; as a matter of fact, amongst the tasks performed by FBOs in meat plants, even though not symmetrically, those tasks related to the processing, and cutting of meat can be considered also within the above cat. SOC. To measure the extent of the event, including also the cases identified and recorded by INAIL, it will be necessary to wait for data consolidation along with the conclusion of the administrative and sanitary assessment of the relevant complaints: these will allow for gathering additional information such as all the injury-related consequences.

## 2.3. Supporting tools aiming to understand and prevent the event

The Joint Working Group ISS-INAIL-Local Health Unit of Bari developed on-the-field three validated different checklists, to facilitate the implementation of the risk-based control plan. The three checklists, in the form of a survey, are the following:

1. Plant manager checklist;
2. Audit checklist;
3. Outbreak investigation form;

The plant manager checklist is targeted to the meat plant managers aiming to engage them voluntarily and raise awareness about the risk factors and their control. It also aims to improve the dialogue and collaboration with the Prevention Department of the Local Health Units.

The Audit checklist aims to harmonize the audit performance in meat plants over the country; it is addressed to the staff from the Prevention Department of the Local Health Units.

The Outbreak investigation form aims to collect information and share experience about outbreaks at the meat plants along with risk factors. All three forms are available in the Appendix as annexes A1-A2-A3 on this document. Below, a summary of their main outcomes.

### 2.3.1. Plant manager checklist

This checklist should be filled by the meat plant owner or by the manager (Appendix A1). It is also available in the online form [here](#). The form is made of 4 sections.

The first section (Questions #1-18) aims to describe the main details of the meat plant such as the business registration number, livestock processed and the average number processed per day, the FBOs recruitment and work turnover, the surface of the slaughtering zone, and the number of FBOs present in each meat plant sector, from lairage through stunning, slaughtering, skinning, to evisceration and carcass cutting and chilling.

The gathered information aims to correctly rank the meat plants, target specific plants, consider consignments of the animals, rules to access the plant and the number of FBOs employed as well as those out-sourced from other companies/contractors.

The second section (Questions #19-54) aims to assess the adoption and implementation of the preventive measures against the spread of SARS-CoV-2 amongst FBOs (e.g., detailed information about FBOs training, meat plant access rules, personal and general hygiene requirements, Personal Protective Equipment (PPE) availability, ventilation system, physical distancing, plant management). All the questions are based on the agreed protocol signed between the Italian Government and the trade unions on 24 April 2020. The main goal of this section is to increase the employer's awareness of the applied preventive measures, to check whether the measures are properly applied as well to inform the Prevention Department of the Local Health Units about any further critical point.

The third section (Questions #55-71) focuses on the specific environmental conditions such as water-spraying and steam generation that could represent a further risk factor. The last section (Questions #74 – 79) relates to the general rules on data protection.

### 2.3.2. Audit checklist

The audit checklist (Appendix A2) aims to report the outcomes from the audit and inspection activities (as to physical distancing, PPE, cleaning and disinfection, ventilation, humidity and steam generation)

performed by the officers of the Prevention Department of the Local Health Units. The check-list proposes partially the same scheme of the meat plant manager checklist with a greater focus on the legislative provisions.

### 2.3.3. Outbreak investigation form

The Outbreak management investigation form (Appendix A3 – available [online](#)) is targeted the officers of the Prevention Department of the Local Health Units (see Annex III) and is composed of five sections.

The first section (Questions #4-14) aims to describe the main operational features of the meat plant, the livestock species and the average number processed per day, the recruitment and turnover of FBOs, the surface of the slaughtering area and the number of FBOs present in each sector/area of the meat plant.

The second section (Questions #15-24) addresses the outbreaks features as to the outbreak date of occurrence and notification, the number of FBOs affected throughout the different areas/sector of the plant.

The third section (Questions # 25-33) aims to detail all the preventive measures for the management of the outbreak adopted and implemented by the meat plant or by the Prevention Department of the Local Health Units (e.g., total/partial closure of a sector, reduction of the processing, reduction of the workforce, increase of the measures).

The fourth section focuses on the possible causes of the spread of the infection (Question # 34). The fifth section (Questions # 35-41) covers the General Rules for Data Protection.

Figure 3 shows the overall flow diagram on which the risk-based control plan relies and the coordinating activities across the country.

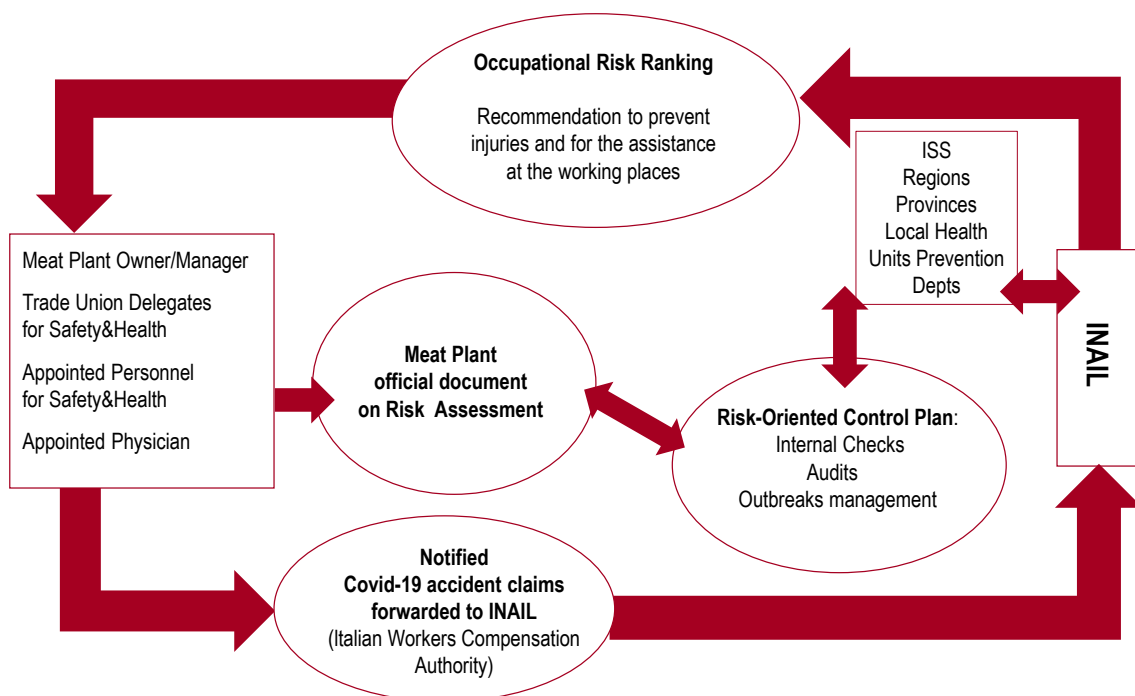


Figure 3. Cross-cutting aspects of the risk-based control plan, related to the central and territorial levels



## 3. Data and expected outcomes

### 3.1. Data flow

The plant manager checklist and the outbreak management investigation form filled in by the relevant staff (meat plant managers and Prevention Department Operators) will be collected and assessed by the ISS-INAIL-Local Health Unit of Bari/Prevention Dept. The outcomes will be shared with stakeholders under the collaboration framework of the risk-based prevention plan. Through the harmonized data collection and analysis, valuable information will be gathered to identify the most likely risk factors at the meat plants and the most effective preventive measures to better contain the spreading of the SARS-CoV-2 virus. From such evidence, it would be possible to refine the guidelines in close cooperation with the stakeholders and the health officers.

From the data and information assessed, a final report from December 2020 to December 2021 will follow, detailing:

1. Meat plants actively participating (number of Prevention Departments, participating plants, checklists and outbreak management forms collected);
2. Characterization of the participating meat plants (livestock number and species processed, number of FBOs, slaughtering areas, third companies, etc.);
3. Enforcement of the preventive measures aiming to control and reduce the spreading of the SARS-CoV-2 (number complying/non-complying meat plants, number of non-compliances or critical situations, sectors/areas affected);
4. Outbreaks features (outbreak duration, number of FBOs affected, disease prevalence throughout meat plant sectors/areas and FBOs, containment measures).

Through the comparison of outcomes resulting from point 2, 3 and 4, where possible and based on the number and quality of such outcomes, all the conditions that could likely represent a risk factor for the spreading of the SAR-CoV-2 virus, along with the most effective measures for the prevention and mitigation of SARS-CoV-2 spreading, will be identified. The gathered evidence will support the advocacy activity of the health officers towards the stakeholders, to properly implement and enforce the preventive measures.

### 3.2. Expected outcomes

The expected outcomes of the risk-based control plan will be the following:

- Raising awareness of the employers in complying with the preventive measures applied at the meat plants;
- Preventive measures verification and standard data recording of all the measures implemented in the meat plants;
- Deepening the knowledge of the impact of some risk factors (e.g., overcrowding, humidity, temperature) that could facilitate the persistence and the spread of SARS-CoV-2;
- Recording, through a standardized methodology, all the information related to the outbreaks that occurred at the meat plants along with the management measures taken by employers and by Prevention Department Officers.

- Draft and update proper guidelines, based on the most recent evidence, on the implementation and enforcement of preventive measures targeting employers and FBOs;
- Draft and update guidelines for efficient and effective management of outbreaks management in the meat plants targeting employers FBOs and Prevention Department Officers.

## Conclusions

The large number of meat plants across Italy, along with the large differences in the size and the livestock species processed at the Regional/Province level under the Economic Activity Code ATECO-10, requires a joint approach to assess the implementation process of the preventive measures and tailored to each local situation and to the risk-category.

This would definitively allow an effective and tailor-made range of checks of the meat plants to ensure the health and safety of FBOs and the whole food supply chain. The risk-based prevention plan represents the best tool in terms of advocacy action towards stakeholders.

A deeper knowledge of the risk factors at the national level would definitively support the raising of awareness amongst the meat plant management staff thus increasing early preparedness and resilience of the food supply chain. Possibly, there might be the opportunity to categorize the meat plants across the country as per sustainability, readiness and resilience criteria.

This proposed “modus operandi”, currently limited to meat plants, could be also considered in the future as a benchmark model or as a useful methodology to help to achieve the UN sustainable development goals within the food chain.

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# Appendix





# A1. Plant manager checklist

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## MEAT PLANT MANAGER CHECKLIST

### MEASURES FOR THE CONTAINMENT OF THE SPREAD OF SARS-CoV-2 VIRUS IN MEAT & PROCESSING PLANTS

The checklist allows the meat plant manager to certify that all requirements for the prevention of the virus spreading in the plant are implemented. Such a form can be used as a guideline to identify critical issues and applying proper corrections. Once submitted, it allows the collection of information at the national level and a further selection of meat plants for follow up.

DATA WILL BE ANONYMIZED IN COMPLIANCE WITH THE CURRENT LEGISLATION ON PRIVACY.

\*Mandatory field

1. Name - Surname\*

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2. Address\*

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3. Meat plant \*

Please provide the National business registration number

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### SIZE AND TYPE OF THE MEAT PLANT

4. Meat plant location \*

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5. Region/province \*

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6. Address \*

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7. What animals are slaughtered/processed? \*

If you chose OTHER, please specify the animal species

Tick all the relevant boxes

- Bovine
- Pigs
- Sheep/goats
- Equine
- Poultry
- Lagomorphs

Other:  \_\_\_\_\_

8. Please provide the weekly working days at the plant \*

Tick one box

- 1
- 2
- 3
- 4
- 5
- 6
- 7

9. Please provide the weekly slaughtering/processing days at the plant? \*

Tick one box

- 1
- 2
- 3
- 4
- 5
- 6
- 7

10. Please provide the work shifts within 24H at the plant

Tick one box

- 1
- 2
- 3

11. At the plant are there third companies, contractors, self-employed staff permanently working? \*

If you answer NO, please skip to Q14

Tick one box.

- YES
- NO

12. How many cooperatives, third companies, contractors or self-employed staff permanently work in the plant?

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13. What kind of tasks\*activities do they carry out?

If you tick OTHER, please specify

Tick all the relevant boxes.

- Livestock Handling
- slaughtering
- deboning
- maintenance
- cleaning
- preparations
- storing
- transport
- cutting
- packaging
- administrative tasks

Other:  \_\_\_\_\_

14. Number of FBOs at the plant

Mandatory answer and one answer per column are required. Please tick the box related to the number of FBOs (average) permanently working in the plant, spotting the difference between employees from the main company and non-employees (under contract by cooperatives, third-party companies, tenders or self-employed), as well as between FBOs assigned to the production line (lairage, slaughtering chain, cutting, de-boning, stockroom, etc.) from those not directly involved in the production (e.g., offices, maintenance, canteen, cleaning, etc.). FBOs occasionally present at the meat plant should not be considered.

Tick all the relevant boxes

	Total FBOs	Employed FBOs at the production line	Employed FBOs Not at the production line	Not-employed FBOs at the production line	NOT employed FBOs NOT at the production line
0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1 to 5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6 to 10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11 to 25	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26 to 50	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51 to 100	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
> 100	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15. Number of FBOs at the slaughtering line \*

Please tick the number of operators involved in SLAUGHTERING (from stunning to chilling) or PROCESSING / CUTTING. For FBOs assigned to the slaughter line, please spot the difference between red meat (cattle, horses, pigs and sheep and goats) and white meat (poultry and lagomorphs). If there is no specific species slaughter do not reply. Tick all the necessary replies.

*Tick all the relevant boxes*

- red meat: < 10 FBOs
- red meat: from 10 to 25 FBOs
- red meat: > 25 FBOs
- white meat: < 5 FBOs
- white meat: from 5 to 15 FBOs
- white meat: > 15 FBOs
- meat cutting: < 10 FBOs
- processing and cutting: from 10 to 25 FBOs
- cutting: > 25 FBOs

16. Provide the total slaughtering/processing surface as for bovine/equine animals

Please provide the total working surface or those intended for the slaughter/processing of cattle and horses.

All the premises (physically separated) connected and serving the slaughtering/processing surface should not be considered (e.g., tripe stocking, leather processing area, changing rooms, toilets, etc.). If there is no species slaughtering/processing do not answer.

*Tick one box.*

- < 100 SQM
- 100 - 400 SQM
- > 400 SQM

17. Provide the total slaughtering/processing surface as for pigs/sheep-goats/poultry/lagomorph

Please provide the total working surface or those intended for the slaughter/processing of cattle and horses. All the premises (physically separated) connected and serving the slaughtering/processing area should not be considered (e.g., tripe stockroom, leather processing area, changing rooms, toilets, etc.). If there is no species slaughtering/processing do not answer.

*Tick one box.*

- < 50 SQM
- 50-100 SQM
- > 100 SQM

18. Number of processed animals\*

Please provide the average number of animals slaughtered per day.

For meat processing /cutting plants simply select the proper answer.

Days with no slaughter shall not be considered.

For example, if 600 cattle and 400 horses are slaughtered in a year in a meat plant that slaughters twice a week (equal to 104 slaughter days in a year), the number to reported for cattle + horses shall be  $(600 + 400)/104$ . For poultry and rabbits, the total number of animals slaughtered per day shall be expressed in LSU ([Livestock Unit](#)). For the correct calculation please do refer to the official veterinarian at your plant. If there is no species slaughtered do not answer. One answer for one species allowed.

Tick all the relevant boxes

- Bovine + equine < 20
- Bovine + equine from 20 to 50
- Bovine + equine > 50
- Sheep/goats < 200
- Sheep/goats from 200 to 400
- Sheep/goats > 400
- Pigs < 150
- Pigs from 150 to 500
- Pigs > 500
- Poultry + lagomorphs < 2,5 LSU
- Poultry + lagomorphs from 2,5 to 6 LSU
- Poultry + lagomorphs > 6 LSU
- Processing meat

INFORMATION

19. Were the FBOs informed to stay at home in the case of fever or flu-like symptoms and to warn their general practitioner? \*

Tick one box

YES  NO

20. Were FBOs informed about complying with all mandatory measures issued by the Authority/employer when entering the meat plant (e.g., physical distancing, hand hygiene, proper behaviour)? \*

Tick one box

YES  NO

21. Were FBOs informed to promptly warn the employer in case of any flu-like symptom during the work, bearing in mind to anyway respect the physical distancing? \*

Contrassegna solo un ovale.

YES  NO

ENTERING THE MEAT PLANT OPERATING PROCEDURES



22. Are procedures implemented and enforced to prevent people with body temperature >37.5 entering the meat plant? \*

*Tick one box.*

- NO  
 YES, upon the sole information and/or compiling self-declaration  
 YES, upon information and body temperature scan

#### ENTERING PROCEDURES FOR SUPPLIERS

23. Are procedures implemented and enforced to allow suppliers entering/transiting/exiting the meat plant based on specific routes, timing to reduce contact and with in-house staff? \*

*Tick one box.*

- YES  NO

24. Are there dedicated toilets and hygiene facilities that are daily sanitized, for suppliers/transporters/external staff? \*

*Tick one box.*

- YES  NO

25. Did the employer duly informed third companies/contractors/self-employed staff accessing the plant concerning the entering procedures, proper behaviour, working environment, and all the applied measures on physical distancing (at least 1 meter)? \*

*Tick one box.*

- YES  NO

26. Does the employer verify whether third companies/contractors operating in the plant comply with the measures in place? \*

*Tick one box.*

- YES  NO

#### CLEANING AND SANITIZATION

27. Does the meat plant management staff ensure daily cleaning of all the premises, environment, facilities, changing rooms, shared places and IT stuff, canteen and food/beverage vendor machines?\*

*Tick one box.*

- YES  NO

28. Does the meat plant management staff ensure daily sanitization of all the premises, environment, facilities, changing rooms, shared places, IT stuff, canteen and food/beverage vendor machines? \*

If your answer is NO please skip to the next section

Tick one box

YES  NO

29. How often the sanitization is performed?

Tick one box.

daily  3-5 times per week  1-2 times per week  2-3 times per month  Once per month  
 less than one time per month

30. Who performs the sanitization?

If you select External company skip to the next section

Tick the relevant boxes

External company  
 In-house staff

31. In the case of in-house staff, what products are used?

Provide the commercial names

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#### PERSONAL HYGIENE MEASURES

32. Does the plant management staff provide proper handwashing sanitisers? \*

If your answer is NO please skip to the next section

Tick one box.

YES  NO

33. Are the handwashing sanitisers easily available to all FBOs?

*Tick one box*

YES  NO

PERSONAL PROTECTIVE EQUIPMENT (PPE)

34. Does the plant management staff provide PPE? \*

In case there is no PPE available select the right answer and skip to the next section

*Tick one box*

- ALWAYS, in all the workstations regardless of the physical distancing of 1 meter
- ONLY where physical distancing is not guaranteed to FBOs
- NO, as FBOs can work with a physical distancing of 1 meter

35. If the PPE is provided, what kind of equipment is it?

*Tick all the relevant boxes*

- Surgical face masks
- FFP1 masks
- FFP2 masks
- FFP3 masks
- gloves
- eye shields/glasses
- overall

Other:  \_\_\_\_\_

36. Is PPE replaced day by day?

*Tick one box*

YES  NO

37. Are FBOs been trained on PPE utilization?

*Tick one box*

YES  NO

VENTILATION

NATURAL VENTILATION

38. Are there natural ventilation facilities (through windows, doors)? \*

If your answer is "NO" in all the sectors/units, select NO and skip to the "Forced Ventilation" section

Tick all the relevant boxes.

	YES	NO
Production	<input type="checkbox"/>	<input type="checkbox"/>
Offices	<input type="checkbox"/>	<input type="checkbox"/>
Chang. rooms	<input type="checkbox"/>	<input type="checkbox"/>
Canteen	<input type="checkbox"/>	<input type="checkbox"/>
Shared places	<input type="checkbox"/>	<input type="checkbox"/>

39. Is the ventilation ratio (natural ventilation/stepping surface) equal to or greater than 1/16 for production lines and equal to or greater than 1// for admin. offices, changing rooms and shared places?

Tick all the relevant boxes.

	SI	NO	No natural ventilation
Production	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Offices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chang. rooms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Canteen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shared places	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### FORCED VENTILATION /AIR CONDITION

40. Is there any forced ventilation/air condition system?

If your answer is "NO" select "NO" in all boxes please skip to the next section

Tick all relevant boxes.

	YES	NO
Production	<input type="checkbox"/>	<input type="checkbox"/>
Offices	<input type="checkbox"/>	<input type="checkbox"/>
Chang. rooms	<input type="checkbox"/>	<input type="checkbox"/>
Canteen	<input type="checkbox"/>	<input type="checkbox"/>
Shared places	<input type="checkbox"/>	<input type="checkbox"/>

41. If there is a forced ventilation/air condition system, is the air re-circulation active?

If the air re-circulation is active by > 30% select "YES" and "% re-circulation > 30%"

Tick all the relevant boxes.

	YES	% recirculation >30%	NO
Production	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Offices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chang rooms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Canteen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shared places	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

42. If the forced ventilation/air condition is in place, is the system maintenance and filters cleaning regularly performed?

If an operational manual is available, please select the proper box

Tick all the relevant boxes

	YES	NO	Operational manual of the system
Production	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Offices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chang rooms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Canteen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shared places	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### PHYSICAL DISTANCING

43. Has the plant management staff provided a different space allocation to comply with the minimum physical distancing of at least 1 meter amongst FBOs? \*

Tick one box

YES  NO

Not needed

44. Is the physical distancing of at least 1 meter enforced over the FBOs? \*

Tick one box

YES  NO

45. Does the plant management staff ensure physical distancing amongst FBOs and the public? \*

*Tick one box.*

YES  NO

Not needed

46. Are been set up entering/exiting turnover to ensure physical distancing of at least 1 meter? \*

*Tick one box*

YES  NO

Not necessary

47. Is the access to shared places (e.g., canteen, changing rooms, smoking areas, food/beverage vendor machines) under control and based on reduced stay-time along with physical distancing of at least 1 meter amongst FBOs? \*

*Tick one box*

YES  NO

#### MEAT PLANT STRUCTURE

48. Are been closed down those sectors/units other than the production line or those whereas remote working is possible? \*

*Tick one box*

YES  NO

49. Has been set up a work shift plan for FBOs in the production line aiming to minimize physical interactions and develop autonomous, distinct and recognizable groups? \*

*Tick one box*

YES  NO

50. Is the remote working used for those tasks/activities that allow it? \*

*Tick one box.*

YES  NO



51. Are wage guarantee funds used? \*

*Tick one box*

YES  NO

52. Is the overdue leave used? \*

*Tick one box*

YES  NO

53. Has been set up a joint committee (between occupational security and trade union representatives) to implement and enforce the set of measures to contain Covid-19 spreading? \*

*Tick one box*

YES  NO

54. Is the Risk assessment technical document been considered concerning the SARS-CoV-2 risk? \*

*Tick one box*

YES  NO

#### SPECIFIC ASPECTS OF THE MEAT SECTOR

##### WATER JETS

55. Are high-pressure water jets (e.g., es. Surfaces washing, carcasses, clothing, tools) used? \*

If your answer is NO, select NO and skip to the section on "Pigs scraping"

*Tick one box*

YES  NO

56. If high-pressure water jets are used, is such activity performed amongst FBOs?

*Tick one box*

YES  NO

57. If high-pressure water jets are used amongst FBOs, at what physical distance are they applied?

*Tick one box*

- < 1 meter
- 1-2 meter
- > 2 meter
- There are other FBOs

58. If high-pressure water jets are used amongst FBOs, do the FBOs using them wear additional PPE as laid down in section 8?

*Tick one box*

- YES  NO

59. If your answer Q58 is YES, what are the additional PPE?

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#### PIGS SCRAPING

If there are no pigs slaughtered skip to Poultry slaughtering.

60. If pigs are slaughtered, scraping is performed by:

*In the case your answer is different from 1,2,3,4, skip to poultry slaughtering*

*Tick all the relevant boxes.*

- 1. Scalding in hot water bath
- 2. Steam and water
- 3. Singeing
- 4. Brushing & showering
- 5. Infrared
- 5. Mechanical removal

61. If the previous techniques are applied, do steam and aerosol release occur in the presence of FBOs?

*If your answer is NO please skip to poultry slaughtering*

*Tick one box.*

- YES  NO

62. When steam and aerosol are released, at what distance from the source FBOs keep working?

*Tick one box*

< 1 meter

1 - 2 meter

> 2 meter

63. When pigs scraping is applied and aerosol/steam is released is there an effective aspiration system?

*Tick one box*

YES  NO

64. When pigs scraping is applied and aerosol/steam is released, is additional PPE used (as to Section 8)?

*Tick one box*

YES  NO

65. If your previous answer is YES, what is the additional PPE?

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#### POULTRY SLAUGHTERING

*If there is no poultry processed skip to pre-slaughtering steaming*

66. Poultry stunning is performed by:

*Tick all the relevant boxes*

Electrical

Electrical waterbath

Gas

67. Defeathering is performed by:

*Tick all the relevant boxes.*

Waterbath

Waterbath & steam tunnel

Mechanical removal

Dry removal

PRE SLAUGHTER NEBULIZATION

68. Are there nebulizer systems in the pre-slaughter area and lairage? \*

If your answer is NO skip to the next section

*Tick on box*

YES  NO

Do not know

69. Does the nebulization in the preslaughter and lairage occur in the presence of FBOs?

If your answer is NO skip to the next section

*Tick on box*

YES  NO

70. If nebulization in the preslaughter and lairage occur in the presence of FBOs, is additional PPE used (as to section 8)?

*Tick on box*

YES  NO

71. If your answer is YES, what is the additional PPE used?

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In this section you can add some notes on the answers provided in the previous sections or provide additional preventive measures implemented in the plant

72. ADDITIONAL PREVENTIVE MEASURES

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73. ADDITIONAL COMMENTS

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PRIVACY (in compliance with Reg. EU 2016/679 and to the Codice Privacy, as to D.Lgs.101/2018)

The Istituto Superiore di Sanità (hereinafter ISS), legally based in Viale Regina Elena n. 299 - 00161 Rome – ITALY, being the Data Controller, according to art. 13 of EU Regulation 2016/679 (hereinafter "GDPR"), informs that the data processing will take place and carried out in the following ways:

**1. Purpose and legal basis of the processing**  
The processing of personal data will be used for study and research purposes aimed at improving the prevention activities of Covid-19 outbreaks in those frameworks mostly related to the contagion risk.

The legal basis for the processing of personal data referred to in point n. 2 of this privacy information policy is laid down in art. 6, par. 1, letter a) of the GDPR, as "the interested party has given his explicit consent to the processing of such personal data for one or more specific purposes (...)". Furthermore, the interested party, according to art. 17, par. 1, letter b) of the GDPR, has the right to withdraw the consent to the processing at any time and with the same procedure. However, the consent withdrawal does not affect the lawfulness of the data processing carried and will have the sole effect of the ending of the relevant data processing for the future.

**2. Categories of Personal Data**  
For the purposes referred to in point 1, the data processing will concern the following categories of personal data: Personal data; Contact details (specifically the E-mail address of the interested party); Data relating to the professional qualification held.

**3. Data Processing Methodology**  
The personal data processing referred to in point n. 2 of this privacy information will take place through the operations as to in art. 4, art. 1, no. 2 of the GDPR, such as the collection, registration, organization, storage, adaptation or alteration, use, cancellation or destruction. The personal data processing will take place only through methods, tools and IT and manual-paper procedures, strictly necessary to achieve the purposes described in point 1 of this privacy information policy. The ISS provides physical, technical, and organizational security measures according to Article 32 of the GDPR to prevent data loss, illicit or incorrect use and unauthorized data access (Data Breach).

**4. Communication of personal data**  
Data may be accessible for the purposes referred to in point n. 1 by the subjects specifically identified by the Data Controller as part of their respective functions and in compliance with the received instructions. The personal data collected may be communicated, to the extent related to their specific competence, to public and private subjects, natural and/or legal persons, to manage information systems and/or payment systems, including external subjects carrying out specific tasks on behalf of the Istituto Superiore di Sanità and appointed by the Data Processors according to art. 28 of the GDPR or upon request of the interested party, for voluntary insurance schemes and/or complementary and/or supplementary pension schemes. Furthermore, to comply with the law, the Data Controller shall communicate the relevant personal data to third parties such as INPS, INAIL, Financial Authority.

**5. Personal Data Retention Period**  
Personal data will be kept for the entire period necessary for the realization of the purposes referred to in point n. 1 of the privacy information policy, subject to the obligation of further retention imposed by the law at the end of which data will be destroyed or, after anonymization, kept indefinitely.

**6. Rights Of the Interested Party**  
The person to whom the personal data refer, being an interested party, has the rights referred to in art. 15 of the GDPR and ss., in the specific right to access, right to rectification, right to limit the treatment, right to data portability, right of oppose, as well as the right to place a complaint at the Data Protection Authority (art.77 GDPR and 141 of the Code Privacy, as amended by the Legislative Decree N.101/2018).

**7. Procedures for Exercising Rights**  
The interested party may at any time exercise its rights by sending a specific communication to the following ISS contact person, legally based in Viale Regina Elena n. 299 - 00161 Rome  
PEC: presid@pec.iss.it

**8. Identity and Contact Details**  
Data Controller – ISTITUTO SUPERIORE DI SANITA  
In the person of the President: Professor Silvio Brusafiero  
E-mail: presid@iss.it  
PEC: presid@pec.iss.it  
Tel.: 06/49906161

DPO (RPD) - SCUDDO PRIVACY S.r.l. In the person of the Legal Representative: Dr. Carlo Villanacci  
E-mail: RESPONSIBILE.protezionedati@iss.it

INFORMED CONSENT – DATA PRIVACY

74. Surname/name \*

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75. Born \*

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76. Address\*

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I hereby DECLARE that I have fully read and understood the information document regarding the collection, storage and use of personal data and the information necessary for the accomplishment of the purposes referred to in point 1 of this privacy information policy. Moreover, that has read and understood the purposes and methodology of personal data processing and to have had sufficient time to decide, freely and voluntarily, whether or not to give consent.

I AGREE with the personal data processing carried out by the Istituto Superiore di Sanità for the purposes laid down in point 1 of the privacy information policy as referred to in point n. 3.

YES

Date

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## A2. Audit checklist

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### AUDIT CHECKLIST

#### ASSESSING THE MEASURES FOR THE CONTAINMENT OF THE SARS COV-2 SPREAD IN MEAT PLANTS

##### NOTES FOR FILLING IN AND SUBMITTING THE EVALUATION FORM

The survey is based on the case/study carried out by the Local Health Unit in Bari (ITALY) whereby a mostly involved was the slaughterhouse staff rather than cutting plants staff.

This evaluation form focuses on possible microclimate conditions during the slaughtering process, with particular attention to the aerosol generation and humidity conditions, assumed to promote the spread of the virus. Therefore, even a high noise level in the workplace, associated with short-distance verbal communication along with high voice tone, can be considered an additional risk factor. Additional critical issues can also be third-party companies, especially if their working shift plans in the plant and the staff composition.

Here below, there are some tips for completing the form.

##### MEAT PLANT

###### Activities description

Briefly report the main activities carried out in the plant (slaughtering, cutting, wholesale of meat-cuts, etc.); report under the item "activity carried out" according to the company business registration number.

##### FBOs AT THE TIME OF THE EVALUATION

Fill in with your name and surname in the column on the right.

##### MEAT PLANT AND WORKFORCE

###### Slaughtered species

If there are no given species slaughtered, leave the related boxes blank. For a correct calculation, it is suggested to consult the official veterinarian of the plant. For a proper calculation of the average, report the average number of animals slaughtered per day. The days with no slaughter shall not be reported. For example, if 600 cattle are slaughtered in a year in a plant slaughtering twice a week (equal to 104 slaughter days in a year), the number to report for cattle will be 600/104.

For poultry and lagomorphs, please provide the total number of animals slaughtered per day expressed in LSU ([Livestock Unit](#)) bearing in mind the conversion units.

To calculate the slaughtering peaks, if any, you should not consider the average slaughtered animals out of the slaughtering days but you shall consider the number of slaughtered animals out of the days of most intense processing.

###### Number of employees in the meat plant

The total number of plant employees should not be reported. You shall report the number of employees generally present in the plant (e.g., drivers should not be considered if they stay at the plant for a short time). Workers NOT directly employed in the production line (e.g., cleaners, maintenance workers, administrative employees) shall also be considered, provided that they are generally present in the plant. The difference between plant employees (main company) and non-employees (FBOs provided by cooperatives, third-party companies, contracts, self-employed) shall be considered.

###### The average number of employees present in the slaughterhouse (employees and non-employees) by the main sector

Please, avoid double counting: if the same FBO covers different lines/sectors (e.g., slaughtering and de-boning), do consider the main working sector (the sector in which FBO spends most of the working day).

###### Slaughtering surface

Please report the total surface related to the slaughtering of a given species (from stunning to the cooling tunnel). Do not consider the rooms - if physically separated - connected and serving the slaughtering surface (e.g., tripe stockroom, leather processing area, de-boning, changing rooms, toilets, etc.). If there is no slaughter of a given species, leave the box blank. This information is requested through the self-checking system form so, if the latter has been completed, the calculation might be already available: in this case, the FBO in charge of filling in the forms shall cross-check the related information.

##### VENTILATION

Desirable ventilation ratio (natural ventilation surface/stepping surface) should be equal to/greater than 1/16 in the production lines and 1/8 in the offices, changing rooms and common areas.

Knowing the percentage of air-recirculation in the ventilation systems is crucial as it represents a potential concentration/dilution of infectious agents in the air.

30% values are considered as a general selective value needing in any case evaluation, according to the specific operational context, based on the plant structure. From an energy perspective, high rates of air-recirculation percentages enable keeping preset temperatures with lower costs, considering the thermal delta compared to the external climate conditions. Air-recirculation percentage can vary according to the working process phase and to the relative working environment, and the seasonal trends of the external temperature. High percentages of air-recirculation in indoor working places with a high density of workers represent a higher risk. At the end of the section, the Prevention Department FBOs should report about the effectiveness of the ventilation systems taking into account mostly the surface of the premises, doors and windows surfaces and the possible presence of mechanical ventilation.

##### COVID-19 CASE DETECTION

Please avoid double reporting: if the same FBO covers different lines/sectors (e.g., slaughtering and deboning), do consider the main working sector (the sector in which the FBO spends most of the working day).

## AUDIT CHECKLIST

Date \_\_\_\_\_

### Meat plant

Food business Name	
Address	
ATECO Code	- 10.11.00-Non-poultry meat production and slaughter products (slaughterhouse activities) - 10.12.00- Poultry meat production and slaughter products (slaughterhouse activities) - 10.13.00 - Production of meat products (including poultry meat) - Other, (specify)
Activities description	
Slaughtered species	Bovine – sheep/goats – Equine – Poultry – Lagomorphs

FBOs present at the meat plant evaluation (see above notes for completing)

Prevention Dep. FBO	
Official veterinarian	
Employer	
R.S.P.P. (Head of the Prevention and Protection Service) / A.S.P.P. (Prevention and Protection Service representative)	
Relevant general practitioner	
RLS Workers' Safety Representatives (Trade Union representatives)	
Employer consultant	

Did the on-spot inspection take place in conditions representative of normal working activity?

-Yes – No because \_\_\_\_\_

Inspected premises


### 1. Meat plant and workforce

Slaughtered species	Heads of Livestock per day	
	Average	Max
Bovine		
Pigs		
Sheep/goats		
Lagomorphs		
Poultry		

	AVERAGE	MAX
Weekly working days		
Weekly processing days		

Are there seasonal working peaks during the year?	Yes	No
If your answer is YES		
- What are the related months?		
- For what reason?		
- Increased demand – Livestock Production cycle reasons – Plant needs – Other, specify		

At the meat plant are there any permanently working third companies or cooperatives?	Yes	No
If your answer is YES		
- How many are they?		
- What do they do? Livestock handling – slaughtering – de-boning – maintenance- cleaning – meat preparations – stocking – transport – cutting – packaging - administration – other, specify		
- Do third companies workers work in other premises/plants? -Yes – No		



### Meat plant FBOs

	Average	Max
Meat plant FBOs employed by the plant		
FBOs NOT employed by the meat plant		
Total		

### Meat plant employed FBOs/third companies employed FBOs ratio:

Average number of meat plant FBOs (directly employed / not employed) according to the main sector

Sector	Italian		EU		Extra-EU		Total		Total
	Employees	Not employees	Employees	Not employees	Employees	Not employees	Employees	Not employees	
Lairage									
Stunning/Pre-slaughter									
Defeathering/skinning/									
Slaughter line									
Boning									
Warm boning									
Cold boning									
Chilling									
Preparations									
Packaging									
Storing									
Shipment									
Transport									
Administration									
Cleaning									
Other - specify									
Other - specify									

### Slaughtering surface (SQM)

Bovine/Equine			Pigs/sheep-goats/poultry/lagomorphs		
<100	100-400	>400	<50	50-100	>100

## 2. INFORMATION

Due to the covid-19 emergency, are FBOs informed about the following:		
	Yes	No
To stay at home in case of fever or fever-like symptoms and to warn the general practitioner		
To comply with all the Authority and Employer restrictions when accessing the plant (physical distancing, hands hygiene and related behaviour)		
To promptly inform the employer in the case of any fever/flu-like symptoms at the time of work by keeping physical distancing		

Additional notes:

## 3. MEAT PLANT ENTERING RULES

Are there any applied measures avoiding FBOs with body temperature >37.5C entering the plant?

Yes, through the sole FBOs self-declaration  
 yes, through proper information and body-Temperature check

## 4. MEAT PLANT ENTERING RULES FOR SUPPLIERS AND EXTERNAL PERSONNEL

	Yes	No
Have entering/transiting/exiting procedures, targeted to external suppliers accessing the plant and based on established methodologies, routes and timing, aiming to reduce the contact opportunities with other staff, been identified?		
Have dedicated toilets (with daily cleaning protocols) for suppliers/transporters and/or other external personnel been set up?		
Has the employer informed external companies and workers (operating upon contract and/or transport, etc.) having access to the meat plant about the procedures in place ensuring physical distancing of at least 1 meter (even during internal movements) and about proper access behaviour?		
Does the employer verify whether contractors and third-party companies operating in the plant comply with the agreed rules?		

**5. CLEANING & SANITATION**

The meat plant staff ensures the DAILY CLEANING		
Of the production lines?	Yes	No
Of the offices?		
Of the shared places (e.g., changing rooms, canteen, toilets, and food vendors machines)?		
Is there in place a cleaning and sanitation checklist program?		
Is there a cleaning record checklist?		
Does the employer verify the cleaning checklist and operation?		
In the case of different daily working shifts, is foreseen any cleaning operation?		

Additional notes:

The meat plant staff ensure and provides recurring sanitisation			
	Yes, how often per month?	Yes, by meat plant employees or by out-sourced staff (specify)	What products are used?
Production line	Yes	No	
Offices	Yes	No	
Shared places (e.g., changing rooms, canteen, toilets, and food vendors machines)	Yes	No	
Is there in place a sanitisation checklist program?	Yes	No	
Is there a sanitisation record checklist?	Yes	No	
Does the employer verify the sanitisation checklist and action?	Yes	No	
In the case of different daily working shifts, is foreseen any sanitisation action?	Yes	No	

Additional notes:

**6. PERSONAL HYGIENE MEASURES**

Does the meat plant provide hands cleaning stuff?	Yes	No
If YES, is the hands cleaning stuff easily available for all?		
Are there any showers for FBOs?		
If YES, are the showers used by the FBOs?		

Additional notes:

**7. VENTILATION**

Place	Max n. FBOs	Surface	Natural Ventilation	Surface Air intake vents	Ventilation ratio	Forced ventilation (Y/N)	Forced ventilation air circulation (Yes/No) 1 <30% 2 >20% 3 unknown	Any record of the system (Y/N)	Forced ventilation N/H air exchange	Forced ventilation Maintenance (Y/N)	Maintenance frequency 1 6 months 2 annual 3 > 12 month
Lairage											
Stunning/Pre-slaughter											
Defeathering/skinning/											
Slaughter line 1											
Slaughter line 2											
Slaughter line 3											
Boning											
Warm boning											
Cold boning											
Chilling											
Preparations											
Packing											
Storing 1											
Storing 2											
Shipment											
Changing room 1											
Changing room 2											
Changing room 3											
Administration 1											
Administration 2											
Administration 3											
Break room 1											
Break room 2											
Canteen 1											
Canteen 2											
Toilet 1											
Toilet 2											
Other - specify											
Other - specify											

Are there any critical points related to the ventilation system?

- Yes
- No
- If Yes, please specify
- Additional notes:

**8. PERSONAL PROTECTION EQUIPMENT (PPE)**

1-	The meat plant provides and implements PPE utilization in all the working areas/sectors whether or not a physical distancing $\geq 1$ meter is possible
2-	The meat plant provides and implements PPE utilization in working places where physical distancing $\geq 1$ meter is not possible
3-	The meat plant does not provide and implement PPE utilization because FBOs can systematically work with a physical distancing $\geq 1$ meter

**If you answered 1 or 2 to the previous statements:**

**PPE Is:**

- Surgical face masks
- FFP1 – FFP2 – FFP3 face masks
- gloves
- Eyeshield/glasses
- overall
- Footwear
- Other

**PPE Is:**

- Unfit
- Fit for purpose however not properly used
- Fit for purpose and properly used

Were FBOs trained on PPE utilization? Yes / No  
 Is PPE daily replaced? Yes / No

Additional notes:

**9. PHYSICAL DISTANCING**

Is the physical distancing of at least 1 meter between FBOs and public or external staff enforced?	Yes	No
Does the meat plant provide proper FBOs distribution and working places assignment to comply with the physical distancing rules?		
Does the meat plant staff enforce the physical distancing of at least 1 meter amongst FBOs?		
Are there any protection shields amongst FBOs and the public?		
Were the access and exit rules in/from the plant re-organized to guarantee the proper physical distancing of at least 1 meter?		
Is the access to shared places (e.g., canteen, smoking areas, food-beverage vendor machines) under control along with proper ventilation, stay-time and physical distancing of at least 1 meter?		
Additional notes:		

**10. MEAT PLANT ORGANIZATIONAL STRUCTURE**

Is there any FBOs at the production lines working-shift plan aiming to reduce physical contact by setting up an autonomous and identifiable groups?	Yes	No
Have sectors other than the production line whereby remote working is possible closed down?		
Is remote working used by those FBOs whose tasks can be performed remotely?		
Are Wage Guarantee Funds used?		
Is the overdue leave used?		
Did the meat plant staff set up a joint committee with trade union representatives to monitor the implementations and enforcement of Covid-19 mitigation rules?		
Does the employer verify anti-contagion hygiene and behavioural measures compliance by the FBOs?		
Additional notes:		

**11. SPECIFIC MEASURES IN THE MEAT PLANT**

Are high-pressure steam jets used to wash surfaces, carcasses, overall, cutting tools)?	Yes	No
If your answer is YES,		
- In what sector/unit?		
- Are steam jets used in the presence of other FBOs? Yes/ No		
If other FBOs are present, at what distance?		
< 1 meter - 1-2 meters > 2meters		
- Is any additional PPE used by the FBO using the steam jet or by those FBOs around him/her? Yes / No		
- If YES, what kind of PPE?		
Additional notes:		

Tools /activities	Y/N	If YES is steam, spray produced? Y/N	If YES, does it happen in the presence of FBOs Y/N	If YES, at what distance does it happen? >1 m 1-2 m > 2m	If YES, is any PPE used additionally to those referred to in point 8? Which one?
Pigs- Scalding tanks					
Pigs- Scraping					
Poultry water-bath stunning					

Poultry Defeathering tunnel					
Steam jets in pre-slaughter					
Hot water knives sterilization					
Other activities producing steam and sketches etc.					

Additional notes:

**12. NOISES, MICROCLIMATE & DUST**

Evaluating noises, and microclimate parameters in the following sectors/units  
 For temperature, Humidity and dust use a 1 to 4 scoring:  
 1- Acceptable  
 2- Almost acceptable  
 3- Almost not acceptable  
 4- Not acceptable

	Noise Y/N	T	Humidity	Dust
Lairage				
Stunning/Pre-slaughter				
Defeathering/skinning/				
Slaughter line				
Boning				
Warm boning				
Cold boning				
Chilling				
Preparations				
Packaging				
Stocking				
Shipping				
Transport				
Administration				
Cleaning				
Other - specify				
Other - specify				

Additional notes:

**13. COVID-19 OUTBREAKS DETECTION**

Were any covid-19 cases detected amongst FBOs? Y/N	
If YES, in what sector/unit?	How many FBOs?
Sector/unit	Number of positive cases
Lairage	
Stunning/Pre-slaughter	
Defeathering/skinning/	
Slaughter line	
Boning	
Warm boning	
Cold boning	
Cooling	
Preparations	
Packaging	
Stocking	
Shipping	
Transport	
Administration	
Cleaning	
Other - specify	
Other - specify	
TOTAL	

Additional notes:

Date

Prevention Department Operators

## A3. Outbreak investigation form

---

### COVID-19 OUTBREAKS INVESTIGATION FORM

This is a recording form of all the activities carried out by the Prevention Department officers in meat processing plants aiming to manage COVID-19 outbreaks properly. The form shall be filled in only after the outbreak end (e.g., when all the FBOs, after isolation have returned to work.

DATA WILL BE ANONYMIZED IN COMPLIANCE WITH EU PRIVACY LEGISLATION

\*MANDATORY FIELD

1. Email \*

---

2. Surname/name \*

---

3. Local Health Unit \*

---

### MEAT PLANT – OUTBREAKS DETECTION

4. Meat Plant\*

Please provide the name of the plant

---

5. Region/Commune \*

---

6. Province/District \*

---

7. Slaughtered animals \*

If you chose "OTHER", please specify what animal species

Tick all the relevant boxes:

- Bovine
- Pigs
- Sheep/goats
- Equine
- Poultry
- Lagomorph

s

Other  

---

8. Heads of processed livestock

Please provide the average number of animals slaughtered per day.

For meat processing/cutting plants simply select the proper answer.

Days with no slaughter shall not be considered.

For example, if 600 cattle and 400 horses are slaughtered in a year in a meat plant that slaughters twice a week (equal to 104 slaughter days in a year), the number to reported for cattle + horses shall be  $(600 + 400)/104$ . For poultry and rabbits, the total number of animals slaughtered per day shall be expressed in LSU (Livestock Unit). For the correct calculation please do refer to the official veterinarian at your plant. If there is no species slaughtered do not answer. One answer for one species allowed.

Tick all the necessary boxes.

- Bovine + equine < 20
- Bovine + equine 20 - 50
- Equine > 50
- Sheep/goats < 200
- Sheep/goats 200 - 400
- Sheep/goats > 400
- Pigs < 150
- Pigs 150 - 500
- Pigs > 500
- Poultry + lagomorphs < 2,5
- LSU
- Poultry + lagomorphs 2,5 - 6
- LSU
- Poultry + lagomorphs > 6 LSU

Other:

---

9. Total number of FBOs working at the meat plant

Please provide the average number of FBOs permanently present and working at the meat plant. Do not consider those FBOs occasionally working at the plant.

---

10. Total number of FBOs working at the production line

Provide the number of those FBOs working at the slaughter line (from stunning to processing). Please, provide whether red or white meat animals are processed. If no species are here listed, please leave it blank. Tick all the relevant boxes.

- red meat: < 10 FBOs
- red meat: 10 - 25 FBOs
- red meat: > 25 FBOs
- white meat: < 5 FBOs
- white meat: 5 - 15 FBOs
- white meat: > 15 FBOs

11. Total number of third parties, cooperatives contractors working in the meat plant

---

12. % FBOs not - employed by the plant (main company)

Please provide the % of FBOs provided by third parties, contractors, cooperatives or self-employed

---

13. Slaughtering surface for bovine/equine

Please provide the total slaughtering surface for bovine/equine animals (from stunning to chilling). Do not consider those areas (even if physically separated) connected to the slaughtering line (e.g., tripe stacking, skin processing area, deboning, changing rooms, offices, toilets etc.). If none of the boxes is satisfactory leave them blank

- < 100 SQM
- 100 - 400 SQM
- > 400 SQM

14. Slaughtering surface for pigs/sheep/goats/poultry/lagomorphs

Please provide the total slaughtering surface for bovine/equine animals (from stunning to chilling). Do not consider those areas (even if physically separated) connected to the slaughtering line (e.g., tripe stacking, skin processing area, deboning, changing rooms, offices, toilets etc.). If none of the boxes is satisfactory leave them blank

- < 50 SQM
- 50 - 100 SQM
- > 100 SQM

OUTBREAK DETAILS

15. Outbreak starting date

Provide the date of the first recorded outbreak occurred.

---

16. End outbreak date

Provide the end date of the last recorded outbreak that occurred (at the time when no other FBOs are on leave)

---

17. How many FBOs were tested (swab)?

---

18. How many FBOs tested positive? \*

Refer to the total number of FBOs working in the meat plant

---

19. Amongst FBOs tested positive, how many are Italian citizens?

---

20. Amongst FBOs tested positive, how many are EU citizens?

---

21. Amongst FBOs tested positive, how many are Non-EU citizens?

---

22. How many businesses have been impacted by the outbreak? \*

If more than 5 tick the "other" box and spot the number of business.

1

2

3

4

5

Other: \_\_\_\_\_

23. What sectors/units were impacted by the spread of the SARS-CoV-2 virus?

Please provide the % of positive tested cases recorded amongst FBOs working in a specific sector/unit. In the case of FBOs working in multiple sectors/units provide information based on the most recent contact tracing result, if such information is not available, provide the information relevant to the main working sector covered by the FBO. If no cases were recorded leave the box blank.

Tick all the relevant boxes

	<5%	5-10%	10-25%	25-50%	50-75%	>75%
Lairage						
Stunning/preslaughter						
Defeathering/scalding/skinning						
Slaughter line						
Deboning						
Warm boning						
Cold boning						
Chilling						
Preparations						
Packaging						
Storing						
Shipping						
Transport						
Administration						
Cleaning						
Maintenance						
Canteen						



24. Working areas/sectors case index

Tick one box

- Index case unknown
- Lairage
- Stunning
- Defeathering/scalding/skinning
- Slaughter line
- Deboning
- Warm boning
- Cold boning
- Chilling
- Preparations
- Packaging
- Storing
- Shipment
- Transport
- Administration
- Cleaning
- Maintenance
- Other: \_\_\_\_\_

OUTBREAKS  
MANAGEMENT

Please provide information related to the measures adopted implemented and enforced by the employer or the Authority aiming to reduce the spreading of the contagion

25. What measures have been applied to contain the contagion?

Please tick all the relevant boxes

	Implemented by Employer	Implemented by the Competent Authority
<b>Plant closure</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>One or more sectors closure</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>FBOs number decrease</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Activities decrease</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Extraordinary Sanitization</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Diagnostics (swab / serological test also outside closest contacts)</b>	<input type="checkbox"/>	<input type="checkbox"/>
Measures strengthening to contain the spread of the virus in compliance with the Memorandum of Understanding between the Government and the Social Partners of 24 April 2020	<input type="checkbox"/>	<input type="checkbox"/>

MEAT PLANT CLOSURE

Please answer only whether the plant has been closed down  
Closure=total closure; re-opening= reopening even partially

26. Date of closure

\_\_\_\_\_

27. Date of re-opening

\_\_\_\_\_

**CLOSURE OF ONE / MORE SECTORS/UNITS**

Please answer only whether one/more closures occurred

28. What sections/units were closed down? How long?

Please answer whether the information is available.

Tick all the relevant boxes.

	1 day	< 1 week	1 week - 1 month	> 1 month
Lairage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Preslaughter/stunning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Defeathering/skinning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Slaughtering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Deboning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Warm boning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cold Boning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chilling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Preparations' processing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Packaging	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Storing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Transport	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Administration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cleaning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Maintenance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Canteen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**FBOs NUMBER REDUCTION IN THE PLANT**

Please answer only whether the reduction occurred

29. What sectors/units were affected? To what extent considering the FBOs attending the plant before the outbreak occurrence?

Please answer only whether the related sectors/units have been affected by a reduction of the FBOs number

Tick the relevant boxes

	< 25%	25-50%	50-75%	> 75%
Lairage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Preslaughter/stunning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Defeathering/scalding/skinning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Slaughtering line	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Deboning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Warm boning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cold Boning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chilling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Preparations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Packaging	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Storing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Transport	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Administration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cleaning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Maintenance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Canteen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

30. How long the FBOs attendance was reduced?

Tick one box

- 1 day
- < 1 week
- 1 - 1 month
- > 1 month

ACTIVITIES DECREASE

Please answer only whether there has been a real reduction in the activities

31. Slaughtered animals decrease

Please answer only whether there has been a real decrease in slaughtered animals

Tick the relevant boxes

	1 day	< 1 week	1 week - 1 month	> 1 month
No reduction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
< 25%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25-50%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50-75%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
> 75%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

STRENGTHENING ASURES TO CONTAIN THE SPREAD OF THE VIRUS IN COMPLIANCE WITH THE MEMORANDUM OF UNDERSTANDING BETWEEN THE GOVERNMENT AND THE SOCIAL PARTNERS OF 24 APRIL 2020

Please, answer only whether there has been a strengthening of the measures.

32. What measures have been strengthened after the outbreak occurrence?

Tick one box

- Relevant information for all FBOs at the plant
- Access to the meat plant
- Suppliers/external staff access to the plant
- Cleaning & sanitization
- Hygiene measures (gel, hands washing)
- Ventilation
- PPE
- Increased physical distancing
- Applying protective shields
- Setting up constant FBOs teams
- Increased checks (by the employer/delegates)
- Other \_\_\_\_\_

33. Please provide a brief description of the measures concerning the previous question (N. 32)

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Additional comments

This section aims to report those comments by the Prevention Department regarding the possible drivers of the spread of the infection in the meat plant (e.g., crowding, working rhythms, incorrect management of anti-Covid measures, poor hygiene, microclimate, presence of water aerosols or dust in specific processing areas, shared places management, etc.)

34. ADDITIONAL COMMENTS

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## Rapporti ISS COVID-19 (ISS COVID-19 Reports)

ISS COVID-19 Reports are mainly addressed to healthcare professionals to cope with different aspects of the COVID pandemic. They provide essential and urgent directions for emergency management and are subject to updates. All reports have an English abstract.

The complete list is available at <https://www.iss.it/rapporti-COVID-19>.

Some reports (highlighted below) are also translated in English and are available at <https://www.iss.it/rapporti-iss-COVID-19-in-english>

### 2021

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