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# **Training for preparedness in the COVID-19 emergency: the case report of the Istituto Superiore di Sanità**

ISS COVID-19 Training Working Group

Version of May 31, 2020



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The report is addressed to citizens, health professionals and stakeholders. It describes and analyzes the experience of active training carried out by the Italian National Institute of Health during the COVID-19 epidemic. It shares ISS's experience and lessons learned in a preparedness perspective in case of similar future events. The aim is to provide, through consultation forms, useful tools for those who may face similar training needs, but also to present the evidence gathered through the case report methodology. In such a pandemic scenario, the training system needs to be consolidated and manned, as it represents a strategic element, a determining factor, the preparation and management of which cannot be subsequent to an emergency event, but it must be planned and made possible *in advance*.

We thank all the experts who, with their commitment, have allowed the realization of the training events mentioned in the text.

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The reports translated in English are available from: <https://www.iss.it/rapporti-iss-COVID-19-in-english>

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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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*In memory of Giovanni Renga,  
advocate of a National School for Public Health*



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## Target of the report

This report is addressed to those who, as individuals or as part of an institution, will carry out emergency training activities of personnel working in clinical and public health contexts. This training is designed for the preparation and contrast phase, in the national and international scope.

## Acronyms

AGENAS	<i>Agenzia Nazionale per i Servizi Sanitari Regionali</i> (National Agency for Regional Health Services)
AICS	<i>Agenzia Italiana per la Cooperazione allo Sviluppo</i> (Italian Agency for Development Cooperation)
AIFA	<i>Agenzia Italiana del Farmaco</i> (Italian Drug Agency)
CHW	Community Health Workers (Healthcare Professionals and Social Health Workers)
CME	Continuing Medical Education
CNOAS	<i>Consiglio Nazionale Ordine Assistenti Sociali</i> (National Council of Social Workers)
COVID-19	<i>CoronaVirus Disease 2019</i>
CRUI	<i>Conferenza dei Rettori delle Università italiane</i> (Conference of Italian University Rectors)
ECDC	European Centre for Disease Control and Prevention
FAD	<i>Formazione a Distanza</i> (e-learning)
FISM	<i>Federazione Italiana delle Società Medico-Scientifiche</i> (Italian Federation of Medical Scientific Societies)
GP	General Practitioner
INAIL	<i>Istituto Nazionale Assicurazione Infortuni sul Lavoro</i> (National Institute for Insurance of accidents at work)
ISTAT	<i>Istituto Nazionale di Statistica</i> (National Institute of Statistics)
LHU	Local Health Unit
LTCF	Long-Term Care Facility
MIGEP	<i>Federazione nazionale delle professioni sanitarie e sociosanitarie</i> (National Federation of Health and Social Professions)
NGO	Non-Governmental Organization
NHS	National Health Service
PBL	Problem-Based Learning
PCP	Primary Care Paediatrician
PPE	Personal Protective Equipment
SARS-CoV-2	Severe Acute Respiratory Syndrome Coronavirus 2
WG	Working Groups
WHO	World Health Organization



# Introduction

“A major lesson learned from past emergencies is that even the most qualified personnel require learning and training accompanied by adequate operational support systems to equip themselves for 21<sup>st</sup> century emergencies.”

(WHO, 2018) (1)

The SARS-CoV-2 epidemic from the beginning of 2020 has often been described as “historic”, that is to say, of such magnitude that, due to the novelty, extent and severity of the event, enters the history of the human being.

What has happened transcended the common “dimension of possible”, surprising governments and populations of the entire planet, often unprepared for an unexpected event such as an unknown agent pandemic.

Intending history as *magistra vitae*, this work retraces and analyses the training activity carried out by the Istituto Superiore di Sanità (ISS, the National Institute of Health in Italy) during the COVID-19 epidemic, in order to disseminate its lived experience and grasp its teachings with a view to preparedness for similar future events.

In this pandemic scenario, training represents a strategic element, a determining factor whose preparation and management cannot be subsequent to the onset of the emergency, but must be planned and made possible a priori.

All those, who have carried out “on the field” what described in this report, have directly experienced the difference between “training *in* an emergency” and “training *for* an emergency”. This difference, far from being theoretical, has materialized in the response to mass training needs in a very short time and with multi-professional and multidisciplinary implications, as well as to manage uncertainty of contents and procedures, to reorganize and reconsider the entire training chain already consolidated, otherwise, to strengthen internal and external communication according to increasingly effective parameters.

This report, therefore, describes the elements and actions that guided the organization of training during the COVID-19 epidemic, starting with a reflection on critical issues and strengths of the experience achieved and in progress.

The aim is to provide both a potentially useful tool for those who may find themselves, at various levels, having to face similar training needs, and a sort of “alarm” for the entire training system dedicated to the emergency that needs to be consolidated, supervised and staffed.

## Purpose and objectives

This work aims to create a first and synthetic description and analysis of the training experience carried out by the ISS during January-May 2020, in order to face the COVID-19 emergency at its first appearance and subsequent explosion in Italy.

In the spirit of “learning by working” and in accordance with what is promoted by the World Health Organization (WHO) in the WHO Health Emergencies program (WHE) (1), the work began with a phase of “structured end-of-report analysis” of the training activities carried out between peer groups, with the aim of sharing experiences and lessons learned, in order to improve national and regional training levels in any and similar future emergency situations.

## Report methodology

Together with external experts, a dedicated ISS working group (2) was set up, who carried out all the training activities under study.

The working group met periodically from 5 to 31 May 2020 by videoconference, using the EDUISS platform (<https://www.eduiss.it>), to share materials and subsequent drafts and, in consideration of the uniqueness and singularity of the training experience, adopted, as a reference tool, the “case report” model according to references and adapting in particular the CARE checklist (CAse REport) (3).

# Case report: training in COVID-19 emergency

## Presentation of the “case”

The emergency context concerns the international health emergency that occurred in China at the end of December 2019, with the spread of the new SARS-nCov coronavirus, then called SARS-CoV-2. The sudden succession of events in Italy, the second country in the world and the first among Western countries to be affected, had imposed on the whole Italian health system the dramatic need to provide rapid health care responses to a completely “new” problem. Together with the absolute emergency nature at national level, the main problem was, in fact, the uncertainty deriving from the sudden appearance of a pathogen unknown to man and able to provoke even rapid lethal events.

The main characteristics of the COVID-19 “case” can be briefly summarized in the following points:

- pathogen completely unknown to mankind;
- sudden emergence and rapid dissemination at national and international level;
- modes of transmission and syndromic manifestations not fully known at the onset of the pandemic;
- rapid onset and acuteness with possible critical compromise of vital functions, in particular of respiratory function and consequent use of specialized technologies to support them – e.g. Continuous Positive Airway Pressure (CPAP) mechanical ventilation;
- initially poor and uneven validity of the COVID-19 prevention and care measures, making difficult guiding clinical decisions and care and logistics management, both for persons suspected or confirmed SARS-CoV-2 positive, and for management of ordinary assistance;
- discrepancies on the national territory in methods and capacity of taking charge of hospitals and territorial structures, with territorial assistance mainly characterized by affiliated or accredited providers and therefore partly “external” to the system.

All these elements have determined a unique and exceptional situation not only from a health and social point of view, but also in terms of personnel training, with a significant emergency impact on the whole sector itself, with a progressive and rapid cessation of the sources of delivery of events, residential training courses (4) and the simultaneous need / urgency to offer real-time training appropriate to the widest possible range of health professionals (5). The situation that developed has also determined the need to improve knowledge and skills to deal with the emergency outside the classical classroom setting (6). The training need emerged during the emergency and under these particular conditions it was necessary to operate. Appendix A1 shows a timeline of the emergency and the concomitant training activity conducted.

## Analysis of the problem

On 3 February 2020, the Technical-Scientific Committee for emergency management at national level was established at the Department of Civil Protection (OCDPC no. 630 of February 8, 2020) (8).

Insufficient information on COVID-19 had represented one of the main critical issues for the management of the epidemic since its onset, with the consequent need to launch, in a very short time, channels of communication and scientific information that would render immediately accessible all the information sources and scientific literature.

In just as short a time, the Technical-Scientific Committee recognized the importance of launching training interventions at national level capable of providing widespread definitions and common languages

to deal with the emergency and therefore gave a mandate to all those involved, including the ISS, to “strengthen specific training on the new coronavirus 2019-nCov for doctors, nurses and health professionals” (9).

Between 9 and 11 February, the ISS, then, started the design and implementation of a first nationally important training event in the course of a SARS-CoV-2 health and epidemiological emergency.

In addition to the element of uncertainty, the problem of training health personnel during the epidemic was characterized by the following objectives:

- short time available for the realization of training interventions (3 weeks);
- extreme dynamism of the scenario and the need to design a training course that would allow for the supply of up-to-date teaching resources that could be updated on the go;
- high number and variety of recipients (virtually all Italian health professionals, including the clinical and territorial areas of assistance and prevention, hospital staff of the various disciplines, Prevention Departments, other local and community health services);
- vastness and diversification of the territory to which the interventions are to be delivered, in a context of “regional systems” of health, each with its own characteristics;
- need to use structural and logistic-technological resources already available, due to the temporal impossibility to plan the necessary organizational and functional strengthening of the system.

Furthermore, the type of training interventions to be carried out could not be limited to the transfer of information, but had to be able to determine the adoption of preventive and protective behaviours for large-scale change, both by the health care personnel and, indirectly, by the assisted persons. Training, therefore, also had to provide operators with the tools to implement health education interventions for patients, which were based on the communication of risk and uncertainty (7).

The problem of training in the emergency phase therefore had to deal with a series of characteristics and criticalities that can be briefly articulated in the points shown in Table 1.

**Table 1. Principal characteristics and criticalities of training in the initial phase of the COVID-19 emergency**

Key Element	Characteristic and criticalities
Object of training (what?)	Carry out training on “not fully known/dynamic” vs. training on “known/consolidated”
Quantity and types of recipients (who?)	Multi-professional and multidisciplinary recipients, i.e. all health workers (public, affiliated, accredited and private), belonging to different professions. These also include figures not usually identified as the objective of ISS training and external to the CME System, such as Social Health Workers (OSS) and Social Workers, university students, third sector workers and personnel from foreign countries) Health personnel from countries with limited resources.
Timing and delivery of training (when?)	In a global emergency context at national level (training <i>in</i> an emergency vs. training <i>for</i> an emergency). Create a series of training events to be delivered in a short time period and in a synchronous and contemporary way in order to create a common language
Places (where?)	All national territories and some countries with limited resources (Africa, Balkans and Middle East)
Method (how?)	Through active methodologies and abilities to reach the largest possible number of participants, without constraints

CME: Continuing Medical Education

## Theoretical model of training reference: interventions carried out

The presence of a multi-professional and multidisciplinary catchment area has led, together with the characteristics of the information debt of the epidemic, to the adoption of active training methodologies based on the principles of andragogy (10), which could then motivate learning, stimulating the continuous updating of knowledge as new evidence was collected.

Despite the short times dictated by the emergency, Problem-Based Learning (PBL), an active method for health training, was chosen for e-learning (*Formazione A Distanza*, FAD) in order to prioritize the definition and pursuit of specific (11) and individualizable (12) learning objectives. Alongside this, for the operational component of infection protection and control, a more traditional training translated from WHO courses was added.

The physical distancing imposed by the COVID-19 epidemic has also prompted the ISS to make a rapid and important cultural change, moving from the organization of classroom training to the organization of “virtual” training. The use of audio-visual technologies for remote meetings, especially teleconferencing, has become necessary for scientific dissemination in its various forms. The ISS responded quickly, strengthening the already existing communication technologies, making scientific platforms available to all staff and strengthening the networks of researchers through the creation of Working Groups (WGs) dedicated to COVID-19 which also included experts external to the ISS, belonging to the most important Italian institutions and to the WHO. In the absence of previous experiences in epidemic emergencies, this progressive evolution of training and communication models was achieved thanks to subsequent experiments “in the field” and a series of procedural adaptations implemented progressively, following the model of “learning by doing”. The work carried out by the WGs, albeit remotely, has ensured the creation of a series of ISS COVID-19 Reports (Rapporti ISS COVID-19), consisting of documentation useful for self-training, a series of reports published by the ISS made accessible to meet the training needs of a large target of workers, spreading a common syllabus and a procedural mode of action, waiting for definitive levels to be progressively identified.

The theoretical reference model of all the different activities described in this report is based on the Competence Framework (formal training, relational training, “at work” experiences) and the planning of the training activities to be carried out followed the phases foreseen by the cycle of learning: 1. needs analysis, 2. planning, 3. training implementation and delivery, 4. monitoring, evaluation and development.

### Needs analysis

The criticality of the emergency situation has prioritized the definition of training needs on COVID-19 and has in fact outlined learning objectives for all health professionals:

1. definition and description of what is currently known about the pathogen, the mode of transmission, the triggered syndromic framework and diagnostic tools;
2. description of the main containment, prevention and protection measures;
3. identification of official information sources;
4. sharing of communication strategies for the population and information for health education by health professionals.

## Planning

In the design and planning phase, some of the types of training events available and achievable in this context were considered:

1. FAD (low and medium interaction);
2. Scientific meetings and webinars (remote conferences and seminars via the network, available via video conference with or without streaming);
3. Remote training courses (remotely available by video conference);
4. Other interventions for training, updating and scientific dissemination.

The design and implementation of the training events were conducted on the basis of the organizational, human and technological resources available or quickly reorganized (Table 2) already present and active at the ISS, in particular in the Training Office (*Servizio di Formazione*, SF).

The SF is in fact the service that coordinates the training activity of the ISS which is structured and formalized in a specification for external training (13) as well as subject to a Quality Management System (QMS), based on the principles of the standard international UNI EN ISO 9001: 2015. This system has been maintained, and partly adapted, to the needs of speed and dynamism, representing a solid organizational reference system for training, within which to move all the uncertainties of the specific case. In this phase, in agreement with AGENAS (National Agency for Regional Health Services), the timing for the accreditation of CME training programs was also reduced (from 30 days before the CME event to 5 days) and on the training objectives CME (3 CME objectives of a special nature for COVID-19 have been identified) (14).

It should also be emphasized that this reorganization had to take into account the fact that most of the ISS staff carried out their work in an “agile” manner starting from the first days of March 2020 (15), involving a considerable organizational effort, managed very well thanks to the technological resources that were usable for the training of external personnel.

## Distance training

The design and planning of the FAD training have been adapted from time to time to meet specific needs, which had gradually emerged during the pandemic. The scientific contents, the teaching method, the structure of the course and the delivery methods were therefore characterized by great dynamism, which imposed new ways of working and organizing, stimulating at the same time the FAD Methods and Technologies Working Group to take up the challenge of change.

A group of ISS facilitators and moderators was identified and charged with following and supporting the planned events and, on the basis of the learning objectives, the experts were identified with reference to the specific skills needed.

## Scientific meetings and webinars

The planning phase of the teleconferences took into account the need for a rapid response to the suspension of all training activity in the classroom and the need to respond quickly to the requests of COVID-19 working groups, meetings dedicated to individual issues or training for further emerging issues – as happened for the LTCFs (Long-Term Care Facilities) and rare diseases.

If in the first phase of preparedness in the Pocchiari Hall of the ISS, specific meetings were held to counter the spread of COVID-19 (“Scientific meetings on Wednesday”), with experts located remotely and the presence in the classroom of both journalists and internal and external experts, these activities were subsequently transformed into exclusively remote meetings.

**Table 2. Organizational, human and technological resources for ISS COVID-19 training**

Resource	Description
<b>Organizational</b>	<p>Quality Management System for Training Activities (UNI EN ISO 9001:2015)                      Disciplinary for the organization of ISS training events                      National Standard <i>Provider</i> for CME (<i>Provider</i> n. 2224)                      Enabling the issuance of credits for the National Council of Social Assistants (CNOAS)</p>
<b>Human</b>	<p><b>Training Office (Servizio Formazione, SF).</b> Most of the SF staff was recruited for “customer” assistance activities to provide answers to the hundreds of e-mails of requests for information and assistance from FAD course participants (e.g. help with registration, requests for new passwords, e-mail changes, enrolment support and use of courses, etc.). This resulted in the acquisition of new skills and flexibility in the team. In some phases of the emergency, temporary secretarial support was also required from the staff of other Departments and Centres.</p> <p><b>Scientific Secretariat of the President.</b> Carried out preliminary and scientific support functions to the President, and took action on four main lines: organizing scientific meetings to ensure the continuation of the scientific debate between experts on the subject; organizing, with the support of the reference COVID-19 working group, webinars for LTCFs to promote discussion on the prevention and control of SARS-CoV-2 infection; organizing, with the support of the reference COVID-19 working group, webinars for the community of patients affected by rare diseases; and coordinating the activities undertaken by the Working Groups (<b>ISS COVID-19 WGs</b>) trained in ISS, with the collaboration of internal and external personnel and experts, which have led to a rich production of technical reference documents, infographics, surveillance reports, national surveys.</p> <p><b>Scientific Communication Unit (Servizio di Comunicazione Scientifica, COS).</b> It took action on several fronts to help combat the epidemic, participating in 3 working groups: 1) communication (with production of communication material for different objectives and development of the “ISS for COVID” site); 2) scientific updating (with the production of daily notices for the President, based on the analysis of advances and the production of publications for operators on COVID Contents); 3) training. It also ensured the timely publication of the ISS COVID-19 Reports intended mainly for health professionals with the aim of contributing to their training. As of May 31, 2020, over 50 reports have been produced, some translated into English and one also in Spanish. The COS also produced the ISS Newsletter for COVID-19 which represents a reference framework for the main activities carried out by the ISS in the first period of the emergency</p> <p><b>Experts.</b> The experts for the production of the contents belong to the ISS structures (6 Departments, 19 Centres and to the Technical-Scientific Services, Offices of the Presidency and of the General Management) or are enrolled outside the ISS, preferably by the National Health Service (NHS) (Regions, Local Health Units-LHU, local services) or between health and social health personnel outside it.</p> <p><b>Other ISS resources.</b> Staff of the IT Service, of the General Management, administrative staff (management of agreements, letters of appointment for external teaching, etc.).</p>
<b>Technological</b>	<p><b>EDUISS Platform.</b> The <a href="https://www.eduiss.it">https://www.eduiss.it</a> platform is based on the Learning Management System (LMS) Totara Learn version 11. This system makes it possible to meet the needs of global training management in the face of the growing complexity of ISS distance courses, both from a numerical point of view and from the progressive diversification of registration, management, monitoring and reporting methods; offers the possibility of optimizing the management, creation, monitoring and certification of training courses, as well as the possibility of developing personalized learning paths and allows integrated training management (remote, in the classroom and in the field). The EDUISS platform, also in compliance with the indications of AGENAS, allows the assignment to the different training courses offered based on the skills, objectives, roles and ad hoc criteria of the participants in the health system and not (currently schoolteachers, social workers and other professional figures). Numerous customizations have been developed over the years, facilitating access, management and evaluation of users, progressively more numerous and diversified</p> <p>Furthermore, EDUISS allows interoperability with the SOFIA-MIUR platform and allows ISS staff access through the SSO authentication process (Single Sign-On: single registration method)</p> <p>Currently, the user management plan in an always accessible mode of the Totara-Moodle LMS is based on a forecast of 500,000 active users per year.</p> <p><b>StearLeaf:</b> The tool with which the ISS is equipped for the management of videoconferencing events is StarLeaf which allows one to create virtual meeting rooms or carry out conferences over the network in which users can participate remotely, regardless of the device or videoconferencing system that is used. These meeting services bring together internal and external participants and enable seamless collaboration with high-definition audio and video and easy screen sharing.</p> <p><b>GARR Filesender.</b> The tool used by the ISS to share large documents, which is developed by the GARR Consortium to meet the requirements of the research and education community.</p>



### Remote training courses

The classroom training programs that can be supplemented by distance and field training events, according to the joint approach, help to develop, evaluate and improve the skills to be implemented in the event of an emergency in public health. This is the perspective that allowed the realization of the event “Epidemic outbreak investigation” conducted between 1 October and 13 December 2020 with participants from different Italian regions.

However, upon the onset of the emergency phase and the consequent confinement, the closure of all the classroom spaces made it necessary to reorganize the remote continuation of the activities of all training courses.

### Other interventions for training, updating and scientific dissemination

Cross-party working groups of ISS personnel were created, which allowed the identification of the training needs of health professionals working in the field, through various forms of consultation with experts from all over the country (especially from the northern areas most affected by COVID-19).

These needs were met through the production of a series of ISS COVID-19 Reports, the purpose of which was precisely to help strengthen the knowledge necessary for assistance and fighting the pandemic.

### Implementation and delivery of training

Numerous training activities have been and are still being provided, based on the different types of training identified which, overall, make up the amount of work represented in the following tables. Table 3 shows, for the different types of events, the number of products made, and the quantities dispensed.

Table 3. Types of training activities provided (31 May 2020)

Type	Product Number	Amount
FAD* course enrolments	14	403,463
Attendance at scientific meetings	19	13,000
Attendance at the remote master Course	1	50
Download of ISS COVID-19** reports	50	500,000

\* FAD courses already completed 76% of the total;

\*\* data related to downloads from <https://www.iss.it/rapporti-COVID-19>

A brief description will be provided for each of the training types.

### Distance training

The temporal urgency dictated by the need to train as many health workers as possible throughout the national territory in a short period of time, together with the need to guarantee physical distancing, has forced the choice to use the FAD through the dedicated EDUISS platform. The course material, given the large number of students, was also released through the Google scholar platform for distribution to university students, and to third sector operators through the GARR system.

The following FAD courses have been organized and delivered:

- **Health emergency from new coronavirus SARS-CoV-2: preparation and contrast**  
Delivered in 4 editions addressed respectively to the following professional figures:
  - All CME professions (EDUISS platform)
  - University students (Google scholar platform)

- Healthcare workers from countries with limited resources (in French and English) (EDUISS platform)
- Third sector and Development Cooperation operators (NGOs, AICS staff, etc.) (handout downloadable from GARR system)
- **Infection prevention and control in the context of the COVID-19 emergency**  
Delivered in 5 editions, addressed respectively to the following professional figures:
  - All CME professions (EDUISS platform)
  - Social workers (EDUISS platform)
  - Support operators (simplified edition - EDUISS platform)
  - University students (Google scholar platform)
  - Third sector and Development Cooperation operators (NGOs, AICS staff, etc.) (handout downloadable from GARR system)
- **COVID-19 epidemiological emergency: elements for contact tracing**
- **COVID-19 health emergency: management of the dialysis patient**
- **COVID-19 health emergency and psycho-oncology. Skills to be integrated into clinical practice**
- **COVID-19 health emergency: management of the dental patient**

As for the FAD courses, Tables 4-6 show the courses delivered by the ISS on the EDUISS platform starting from 28 February 2020.

The first **SARS-CoV-2 preparation and contrast** course developed by the Training Service and the Infectious Diseases Department (*Dipartimento Malattie Infettive*, DMI), in 2 months of delivery registered 215,877 health workers of which 159,962 completed the training course successfully.

The **Infection Prevention and Control course in the context of the COVID-19 emergency** was subsequently opened with over 112,545 health professionals enrolled in 62 days of delivery. Of these, over 85,000 have already completed the course. This same course was later opened to Social Workers and, with some modifications, also to Community Health Workers (*CHW Operatori Sanitari di Supporto*,). The course created by the ISS Training Service in collaboration with the Federation of Medical Scientific Societies (*Federazione delle Società Medico Scientifiche*, FISM) on the management of dialysis patients in the current emergency context, has already registered the completion of enrolments. Over 67% have already completed the course.

On April 28, 2020 the **Elements for contact tracing** course opened which collected the first 2408 subscriptions. The course is open only to those who actively carry out the contact tracing activity in the field. Finally, on May 25, 2020, two courses in English and French were opened for healthcare personnel in countries with limited resources: *Novel Coronavirus (SARS-CoV-2) health emergency: preparedness and response and Préparation et réponse à l'urgence sanitaire du nouveau Coronavirus SARS-CoV-2*. These courses arise from the adaptation of the **SARS-CoV-2 preparation and contrast** course to the contexts of the countries of sub-Saharan Africa, the Mediterranean, the Middle East, the Black Sea.

As of 31 May 2020, a total of 403,463 “registrations” were made for FAD events on COVID-19 (a certain number of operators have taken more courses). 305,596 of those enrolled successfully completed the course (76%).

**Table 4. FAD courses for COVID-19 provided by the EDUISS platform (as of 31 May 2020)**

Course	Target audience	Delivery	Enrolled	Advancement
Health emergency from new SARS-CoV-2 coronavirus: preparation and contrast	All professions	28/2-28/4	215,877	finished
Infection prevention and control in the COVID-19 emergency	All professions	30/3-28/9	112,545	62 days/182
	Support workers	3/4-28/9	31,837	58 days/178
	Social workers	16/4-28/9	5,373	45 days/167
COVID-19 emergency: management of the dialysis patient	Surgeons, nurses, paediatric nurses	21/4-14/7	2,002 (registrations closed)	40 days/84
COVID-19 epidemiological emergency: elements of contact tracing	Surgeons, healthcare assistants, biologists, dietitians, prevention technicians (environment and workplace), veterinarians, nurses, paediatric nurses, social workers	28/4-14/7	2,408	33 days/77
COVID-19 health emergency: psycho-oncology. Skills to be integrated into clinical practice	Surgeons, psychologists, nurses, paediatric nurses	11/5-14/7	2,002 (registrations closed)	20 days/64
COVID-19 health emergency: dental patient management	Doctors (maxillofacial surgeons), dentists, dental hygienist	29/5-27/7	229	2 days/53
<i>Novel Coronavirus (SARS-CoV-2) health emergency: preparedness and response*</i>	Healthcare assistants	25/5-16/12	19	6 days/200
<i>Préparation et réponse à l'urgence sanitaire du nouveau Coronavirus SARS-CoV-2**</i>	Healthcare assistants	25/0-16/12	29	6 days/200

\* Delivered in Albania, Armenia, Bosnia and Herzegovina, Egypt, Georgia, Jordan, Kosovo, Lebanon, Libya, Moldova, Montenegro, Palestine, Republic of Northern Macedonia, Serbia, Spain, Turkey, Ukraine

\*\* Delivered in Algeria, Burkina Faso, Cameroon, Central Africa, Madagascar, Mali, Mauritania, Morocco, Niger, Senegal, Tunisia

**Table 5. FAD ISS Course materials on COVID-19 distributed by universities through Google Scholar (as of 31 May 2020)**

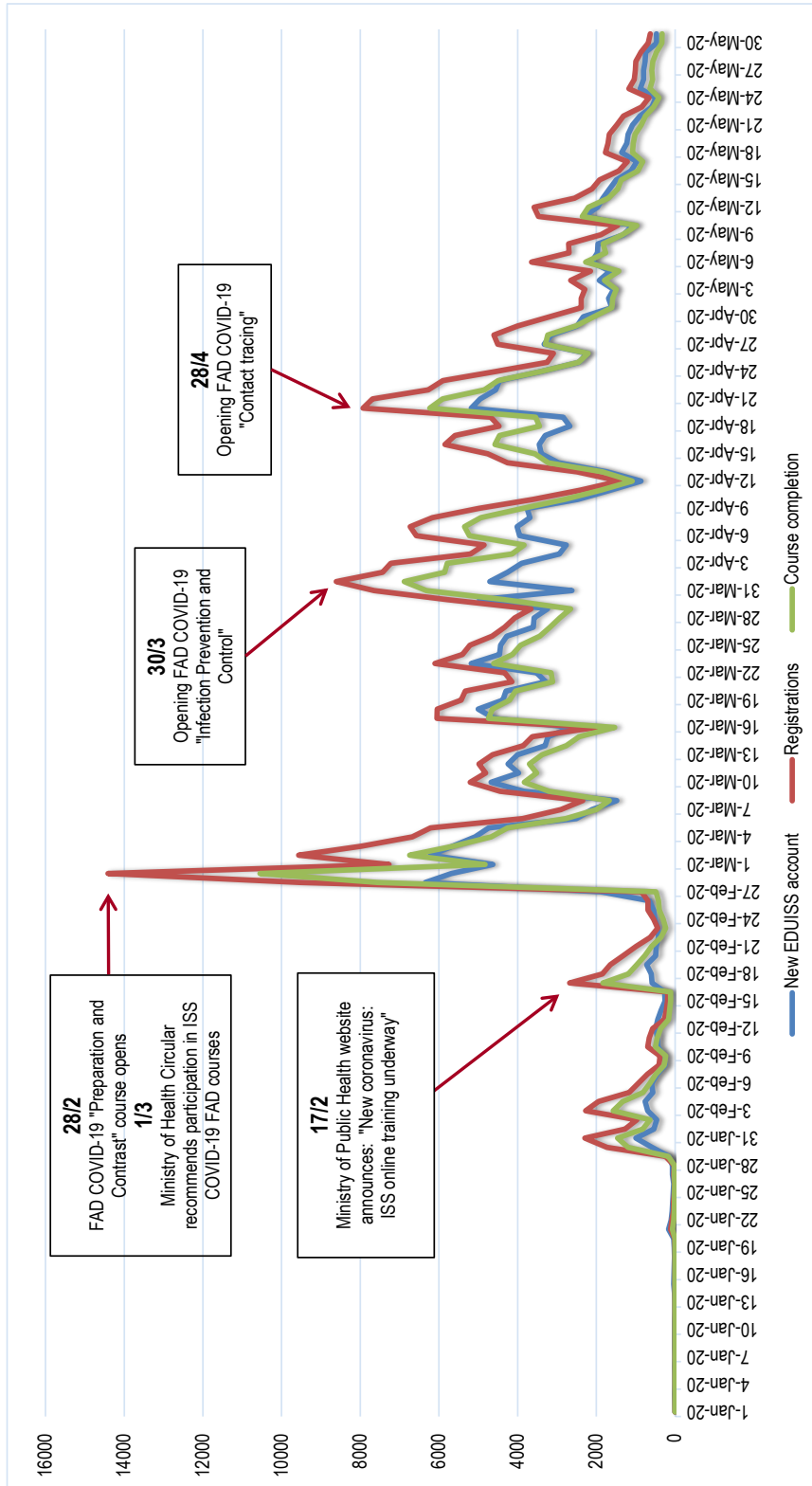
Course	Target audience	Delivery	Enrolled	Accredited
Health emergency from new SARS-CoV-2 coronavirus: preparation and contrast	University students – courses for health professions	26/3-30/5	26,717	25,915
Infection prevention and control in the context of the COVID-19 emergency	University students – courses for health professions	30/4-30/5	6,540	6,540

**Table 6. Distribution of FAD ISS course materials on COVID-19 via GARR (as of 31 May 2020)**

Course	Target audience	Delivery	No. downloaded
Health emergency from new coronavirus SARS-CoV-2: preparation and contrast	University lecturers (CRUI)	23/3-18/4	900
	OSS – MIGEP Federation	25/3-30/5	3,370
	NGO, third sector, AICS	25/3-30/5	155

Figure 1 illustrates the tumultuous trend of events and the need for training of the more than 400,000 subscribers on the platform.

Please refer to Appendix A2 for a description of the main characteristics of the FAD courses carried out in consideration of the variety and complexity of the types of events provided.



**Figure 1. EDUISS platform registration trend (January-May 2020):**

The presence of almost concurrent trends unequivocally shows the training needs of the over 400,000 enrolled in e-learning courses. The creation of the account on the platform (in blue) is followed by enrolment and the rapid conclusion of the training courses

## **Scientific meetings and webinars**

Overall, as of May 31, 2020, the following were completed:

- 18 weekly scientific meetings, national with regions, LHD, hospitals
- 6 webinars on LTCFs
- 6 webinars on rare diseases
- 3 thematic webinars

### **Scientific meetings**

The Scientific Secretariat of the ISS Presidency, with the support of the SF, has set up and coordinated a weekly, remotely accessible scientific meeting to ensure an exchange between experts on the subject, Ministry of Health, AIFA, AGENAS, INAIL, ISTAT, Regions, LHD, Universities, Trade Federations, Scientific Societies and national and regional public health professionals.

The meetings were held from January 29, 2020. By the end of May 2020, 18 meetings had been organized with the collection of remote questions with direct answers from the experts during the meetings in order to ensure the continuation of the scientific debate. The topics of the scientific meetings are reported in Appendix A3.

The meetings saw the remote participation of more than 80 speakers and an estimated total of about 12,600 participants.

### **COVID-19 webinars and LTCFs**

As part of the initiatives that the ISS is still carrying out for the containment of COVID-19 in our country, webinars were organized for the LTCFs, every two weeks (Monday and Thursday), during which various issues were addressed to promote the comparison on prevention and control of SARS-CoV-2 infection. To make the seminar interactive, it was possible to send questions to an e-mail address, to which the speakers responded after the speeches, directly during the seminar, or via e-mail. The documents and videos of the seminars, made available by the Scientific Secretary of the Presidency, were downloaded on average more than a thousand times. The data on streaming links averaged 800 for each seminar.

### **COVID-19 webinars and rare diseases**

A similar initiative has also been activated for rare diseases. The Scientific Secretariat, through the COVID-19 Working Group, organized six webinars on a weekly basis (Tuesday) from 21 April to 27 May 2020, during which various issues were addressed to promote discussion on prevention and the control of SARS-CoV-2 infection. Also, on this occasion, to make the seminar interactive online, it was possible to send questions to an e-mail address, to which the speakers responded directly during the seminar, or subsequently by e-mail.

To ensure the widest participation in the events, the Italian Federation of Rare Diseases (UNIAMO) spontaneously provided it on Facebook live.

Sick people, health workers and professionals from our country and 11 other European and non-European countries participated, including Argentina and the United Arab Emirates. The European Commission has widely disseminated the seminar programs through its channels. In total, the six seminars averaged around 4500 views and 9500 interactions, considering live shares.

## **Other webinars**

Another 3 seminars were held on other topics: “Waters”; “Epidemiology at the time of the coronavirus” within the Spring conference of the Italian Association of Epidemiology; “XXII National Conference on Nicotinism and National Health Service - World No Tobacco Day 2020”.

## ***Remote training courses***

The events were planned to be held in residential, on a structure based on 5 modules (1 module / month, each module consisting of 16 hours distributed over two training days). Due to the COVID-19 health emergency, it was necessary, in progress, to readjust the residential-to-remote delivery formula of the Advanced Training Course “Behaviour Analysis Applied to Autism Spectrum Disorder” both childhood / adolescence and Adults.

The residential event was remotely readapted in a short time in order to meet the schedule. The Starleaf network video conferencing service was used although it was not specific for the provision of courses. Both learners and teachers were contacted to communicate the problems in progress and inform them about the new delivery method. A total of 50 participants attended the remote training courses.

## ***Other interventions for training, updating and scientific dissemination***

During the COVID-19 emergency, in addition to structured training experiences, the ISS promoted other initiatives, some experimental, carried out with the help of external parties, in response to needs that gradually arose. Examples of other activities carried out concerned the Working Groups (WG) and communities of practice.

## **Activities of the ISS WGs for the production of ISS COVID-19 Reports: self-training**

The activities undertaken by the WGs structured in ISS with the collaboration of internal and external personnel and experts have led to a rich production of technical reference documents, infographics, surveillance reports, national surveys, etc. This documentation has proposed, in the contingent impossibility of developing the training activity in the field, primary and official sources of information, training and updating aimed at supporting health professionals, operators of other specific sectors, local authorities, workers, employers, citizens, etc. to meet the needs of safeguarding the health of people and the community in the current emergency context.

In the sense just provided, the ISS COVID-19 Reports (<https://www.iss.it/rapporti-COVID-19>) have, therefore, been proposed as tools for updating and self-training operators. In addition to this document, 50 reports were published up to May 2020, most of which were produced ad interim and subsequently updated in response to the changing scenarios of the epidemic. The reports represent essential and unique sources of reference in the emergency context. Some have also been translated into English and Spanish, in response to the information and training needs of other countries which, on the basis of the Italian experience, build training courses at the local level. The issues included in the reports are different, from home care, the rational use of protections, waste management, infection control of the LTCFs, the execution of swabs, protection measures in internal and external environments, to services telemedicine, mental health, bioethics, food hygiene, catering, bathing, etc. Many of these reports have also been included as reference material for training courses organized by the ISS and other institutions.

The details of the reports produced are shown in Appendix A4.

Overall WGs activities carried out as at 31 May 2020 are:

- 105 meetings of the ISS COVID-19 WGs
- 50 reports
- 500.000 downloads of ISS COVID-19 reports (refer to appendixes for details)

### **Community of practice and selection of resources and literature on pregnancy, childbirth and breastfeeding**

The working group on pregnancy, childbirth and breastfeeding of the National Centre for Disease Prevention and Health Promotion (*Centro Nazionale per la Prevenzione delle Malattie e la Promozione della Salute*, CNaPPS) of the ISS has the Community of Practice as a working method and model of reference.

During the emergency, all the scientific societies involved contributed to the community of practice, in constant dialogue with the various professional realities of the country, to meet the numerous requests and issues received from the Regions, Health Authorities, Associations, individual operators and citizens, in scope of the necessary reorganization of the health care network and revision of the pathways for taking charge of pregnant women, mothers, fathers and new-borns. Examples of this experience were the works developed for the protection of the worker-mother in the COVID-19 era (16) and the presence of a person of her choice alongside in the birth path (17).

Starting from February 2020, in response to the growing need for scientific information from professionals and decision makers, the CNaPPS has also curated a systematic selection of resources and literature on pregnancy, childbirth and breastfeeding and has published weekly updates from 27 February through 7 May 2020 through the ISS portal for epidemiology for public health Epicentro (<https://www.epicentro.iss.it/coronavirus/sars-cov-2-gravidanza-parto-allattamento>) (18).

In this experience, what in ordinary time is an institutional activity of scientific communication has been transformed, in fact, into a virtuous mode of training in the field, based on the constant identification of information gaps, the synthesis of available evidence, its timely communication on large scale and application through reflective practice. The actors of this experience were the workers, in the hospital and local areas, who guided the process through their direct requests to the Scientific Societies and the ISS.

The materials produced have also been the subject of international collaboration with the European Centre for Disease Control (ECDC) in an online course available in the mini-learning area, dedicated to COVID-19 starting from 29 April 2020 and entitled “Micro learning - 7. Mother-infant health in the context of COVID-19” (19).

### **Monitoring, evaluation and development**

To support the process of reviewing and evaluating the training activities, in addition to the amount of data, the following were collected relating to the “COVID-19 Emergency Preparation and contrast” course (the only course completed on May 31):

- Types of members by activity;
- Data of passing the inbound and outbound learning tests;
- Questionnaires with immediate responses from participants

In addition, immediate comments and observations from the training group were collected.

Figure 2 and 3 show data on increased knowledge (post/pre-trial) and liking the course in question.



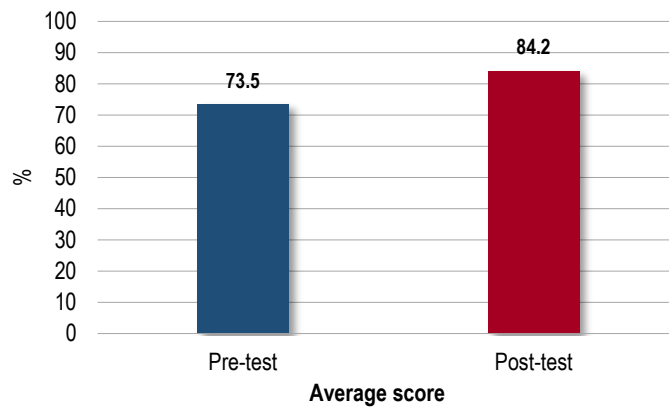


Figure 2. Average pre- and post-test score from users of the FAD Course “Emergency COVID-19 Preparation and Contrast” (ended 31 May)

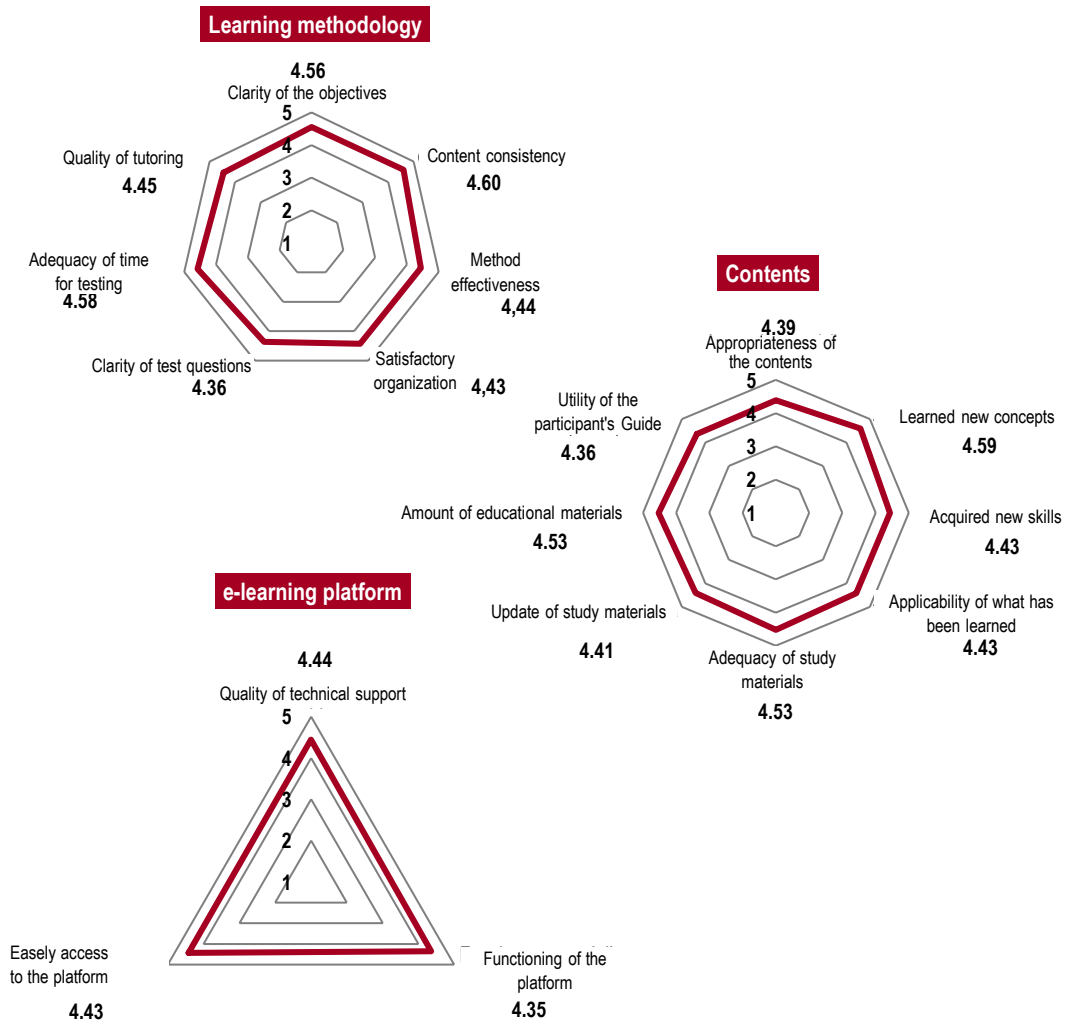


Figure 3. User satisfaction on FAD course methodology, content and platform “Emergency COVID-19 Preparation and Contrast” (ended May 31,2020)

Based on the elements collected and the experience dealt with, the ISS COVID-19 Training WG identified the main critical issues and strengths both with respect to the entire process and with respect to each type of event, as reported in Table 7.

**Table 7. ISS training for COVID-19: key critical issues and strengths**

Criticality	Strengths
<b>General</b>	
<ul style="list-style-type: none"> <li>▪ Lack of an updated emergency training plan.</li> <li>▪ Uneven availability of the necessary logistical-structural support for the use of remote training events.</li> <li>▪ Impossibility of carrying out an assessment of the training needs on which to structure the contents of the courses, due to factors intrinsic to the emergency and the shortness of time and the scarcity of resources to be used immediately.</li> <li>▪ Fast change of information available in the context of the pandemic emergency with the risk of structuring training packages that are rapidly obsolete or with information that growing experience renders incorrect.</li> <li>▪ Difficulty in decision-making processes for areas where the evidence is uncertain or contradictory.</li> <li>▪ Polarization of training on the more purely clinical dimension of pandemic management with little attention to the hospital-territory-hospital organizational level.</li> <li>▪ Difficulty in activating basic and immediately applicable training for the rapid acquisition of essential specialist skills by non-expert operators in the sector.</li> <li>▪ Fragmentation of formal training and refresher systems aimed at healthcare professionals who are not recipients of the continuous training system (CME) with the consequent need to allocate training courses to non-CME personnel at different times and methods and subsequent, sometimes non-formal, CME training courses</li> <li>▪ Workload of dedicated ISS personnel, in a moment of overload also on other activities and difficulties in long-term sustainability.</li> <li>▪ Interregional and local differences in the application of available evidence.</li> <li>▪ Need for national coordination, which plans emergency scientific support actions and communicates in an agreed manner with regional and local levels.</li> <li>▪ Reduced attention to the training needs of third sector operators and health personnel in countries with limited resources.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mandate of the Scientific Technical Committee at the Ministry of Health to carry out training on COVID-19, in conjunction between institutions and professional associations, an active part of the Institutions and member of the Technical-Scientific Committee for Emergency, to promote specific training courses on 'emergency.</li> <li>▪ Availability in ISS of "know-how" and pre-existing resources that can be used even if not dedicated to training and / or not dedicated to emergency training.</li> <li>▪ Availability of networks of professionals and national and international collaborations that the ISS has been able to link to create intense collaboration activity on institutional activities and scientific comparison on COVID-19</li> <li>▪ Inclusion by some ASL of the participation in the course among the results objectives of health workers</li> <li>▪ Collaboration and cohesion of the working group, inside and outside the ISS.</li> <li>▪ Rapid dissemination and adoption of common definitions and language specific to the COVID-19 pandemic among healthcare professionals.</li> <li>▪ Rapid dissemination of special and simplified organizational methods by AGENAS to facilitate the CME accreditation of events on COVID-19 recognized as a special issue.</li> <li>▪ Ability to overcome different visions and possible obstacles more quickly than in ordinary time.</li> <li>▪ Technical-scientific guide.</li> <li>▪ Ability to compare and listen directly to the needs emerging from professionals, associations and citizens thanks to the widespread network of consolidated relationships, even outside the community of practice.</li> <li>▪ Recognition of the technical and training skills of the ISS in the international field and in countries with limited resources.</li> </ul>
<b>FAD EDUISS</b>	
<ul style="list-style-type: none"> <li>▪ Difficulty in quickly allocating new technical resources to cope with the massive, sudden and simultaneous access of active users on the EDUISS platform.</li> <li>▪ Management of tens of thousands of users who, for simultaneous access, require urgent adaptation of the technological infrastructures.</li> <li>▪ Need for constant monitoring, night and day, of the platform from a technological point of view.</li> <li>▪ Massive publicity of FAD training courses, sometimes imprecise, which has led various professional categories to request enrolment in courses even if they are not recipients of the training</li> <li>▪ Inclusion of some FAD ISS courses on COVID-19 as "compulsory training" by some health companies and / or</li> </ul>	<ul style="list-style-type: none"> <li>▪ The technological infrastructure on which the EDUISS platform relies and operates has ensured optimal management of such high numbers of daily course enrolments and simultaneous use of educational resources by the numerous daily active users on the platform.</li> <li>▪ The possibility offered by the platform to automatically and continuously monitor the progress of enrolments and completion of courses.</li> <li>▪ Teamwork, organization and preparation for comparison between colleagues, mutual help. Despite the difficulties, the job was completed in a productive and efficient manner.</li> <li>▪ Quality system of FAD training operational and active since 2003</li> </ul>

Criticality	Strengths
<p>organizations, both public and private, for their employees, leading to a pressure to register in a disorderly way.</p> <ul style="list-style-type: none"> <li>▪ Technical-organizational difficulties in dedicating FAD courses to support figures in the health sector who are not part of the CME system. Subsequent requests for enrolment in the courses by support operators (OSS OSA etc.) of LTCFs and health companies that were not initially recipients of the training.</li> <li>▪ Massive work of assistance via e-mail to the numerous requests for information, assistance and support received at the e-mail address dedicated to the FAD, despite the methods of accessing the platform and using the courses are very simple and intuitive and that the platform and the courses themselves offer specific support sections / resources (help; frequently asked questions FAQ; participant guides).</li> <li>▪ Management of individual requests for access to courses received from citizens, teachers and other non-health professionals.</li> <li>▪ Critical issues mainly perceived by users was the fear of not being able to enter the platform within the scheduled time for registering for courses of interest, sometimes with limited numbers. There was a massive influx of users already registered for some time who, "awakened" by the specific training need, requested forgotten login credentials and requests for assistance related to new registrations were submitted</li> <li>▪ Interaction with other structures external to the ISS for the preparation of teaching materials and training courses, an aspect which, although enriching, has led to greater difficulty in finding the information necessary for the internal authorization process which entailed the need to work on the wire the deadlines for insertion in the AGENAS platform.</li> <li>▪ Emerging training needs of university trainees involved in clinical internships and the need to continue training by accessing the contents developed for healthcare professionals</li> <li>▪ Training needs of third sector workers</li> <li>▪ Training needs of healthcare personnel in countries with limited resources, plus network connectivity issues.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Competence and availability of a structured system for the FAD ISS, with availability of guidelines for the preparation of the teaching materials of the EDUISS FAD courses to be adapted according to emerging needs.</li> <li>▪ Guarantee of resolution of requests for help (assistance to users) in 48 working hours according to agreed quality criteria.</li> <li>▪ Competence in the management of video interviews made in a very short time.</li> <li>▪ Ability to involve experts and institutional figures for the video interviews included in the FAD courses.</li> <li>▪ Ability to provide and monitor the progress of enrolments and completion of FAD Courses ensuring access to training and rapid and timely updating of health professionals on issues particularly relevant for the purposes of prevention, protection and control of infection for the rapid field application of what has been learned.</li> <li>▪ Interesting and enriching interaction with other structures outside the ISS for the preparation of teaching materials and training courses with the strengthening of the ability to collaborate between professionals and to create networks.</li> <li>▪ Training of students of the health professions of Italian universities with a high degree of satisfaction both with respect to the contents of the courses and the management of the telematic platform</li> <li>▪ Creation of different modalities for the use of the FAD for the different objectives</li> </ul>
<b>Scientific meetings and webinars</b>	
<ul style="list-style-type: none"> <li>▪ The technological equipment was a critical point, it was necessary to adapt the technology present to reach the final purpose. With modern equipment and with the addition of some audio / video equipment, the staff could have guaranteed better direction.</li> <li>▪ Poor ability of the speakers at the rhythms of the teleconference teaching.</li> <li>▪ Non-aptitude of the participants to ask questions to the speakers who were in the Q / A.</li> <li>▪ Difficulty in connecting with problems for the correct functioning of the slides.</li> <li>▪ Scarce use of interactive techniques, such as live mini questionnaires at the end of the single report, with immediate view of the response rate.</li> <li>▪ Direct involvement in the front line of the participants on the emergency side which led to the interruption of the course before the final modules in April and May.</li> </ul>	<ul style="list-style-type: none"> <li>▪ The use of the institution's network infrastructure has ensured excellent functionality, at a critical moment, of home internet networks.</li> <li>▪ The staff was able to face the technical and human challenge with great professionalism.</li> <li>▪ Ensuring a continuous exchange of scientific information throughout the country to a science community strongly committed to fighting a new disease, with little time to study it and to dialogue with colleagues in the face of the daily news produced by the international scientific world.</li> <li>▪ For the LTCFs, one of the main places of contagion, it was the only online training opportunity in the country on the use of PPE and all other contagion containment measures, to which more than 1500 residential structures have joined for each organized online seminar.</li> <li>▪ For the weekly online seminars on rare diseases, a unique opportunity for comparison for Italy: socio-health structures and patient associations reached in Italy (more than 5000</li> </ul>

Criticality	Strengths
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average views) and in ten European and non-European countries.

- Availability of speakers belonging to national and international institutions, who have made themselves available without the need to move from their place of work, simplifying the organization of their presence and raising the scientific level of relations.

Criticality	Strengths
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**Remote training Courses**

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>▪ Starleaf tool not optimized for course delivery.</li> <li>▪ Excessive duration of the single daily sessions (7 hours of frontal lessons) whose use is made even less stimulating in the transition from residential to remote.</li> <li>▪ Loss of contact typical of a residential event between teacher and learner and poor interactivity.</li> <li>▪ Difficulty in showing multimedia content protected by copyright and privacy that the teachers had provided to support the lesson.</li> <li>▪ Cancellation of the practical tests and exercises with the teacher.</li> <li>▪ Network performance severely slowed due to the congestion of suppliers nationwide, congestion caused by the massive simultaneous use of networked conference services.</li> <li>▪ Objective and various difficulties of the single participant cause problems for the correct course of the lesson.</li> </ul> | <ul style="list-style-type: none"> <li>▪ Availability of a technological infrastructure</li> <li>▪ Ability to adapt to the situation with maintenance of the entire course.</li> <li>▪ Reduction of travel costs from one place to another by booking trains / planes / ships and hotels.</li> <li>▪ Cost reduction for consumables (pens, sheets, folders and any paper material to be distributed)</li> <li>▪ Availability of additional didactic material, such as lessons, to be made available on EDUISS.</li> </ul> |
|---|---|

Criticality	Strengths
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**Working groups and experiments**

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>▪ Lack of a rapid and uniform system for monitoring clinical-assistance and public health practices in emergencies, capable of promptly returning the information necessary for action (e.g. training gap, support for decision makers).</li> </ul> | <ul style="list-style-type: none"> <li>▪ High level of technical-scientific competence of the various components of the community of practice</li> <li>▪ Consolidated technological infrastructure and communication tools, and support from an editorial group (Epicentro portal).</li> <li>▪ Scientific contribution of all components of the community of practice</li> <li>▪ In situations of great uncertainty, in the absence of solid scientific knowledge on which to base the actions, a community-based approach makes it possible to effectively and promptly link reflective practice (clinical and territorial) to the research and supply of the necessary knowledge action.</li> </ul> |
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## Discussion and conclusions

Although the tail of the pandemic emergency and the related training activities of the ISS are still ongoing at the time of drafting this report, the need to collect and analyse the educational “experiential treasure” experienced by the Institute emerged from the very first moments of the epidemic itself in its quality of a situation full of teachings for the “preparation” for any future similar situations.

The structured analysis of the training activities carried out, as illustrated in the previous paragraphs, has in fact allowed the group to collect a series of elements that have characterized in a qualifying way in its singularity the “case” of the national training of personnel during the emergency by SARS-CoV-2 in Italy.

The entire path, conceived and carried out during the emergency and in the absence of an already prepared specific reference training system for an event of this nature and scope, could in fact be carried out due to the presence of some elements that, from ex-post analysis carried out, were decisive in the realization and implementation of the same and in the absence of which it would not have been possible to carry out such a national training project.

In particular, the following elements that emerged at the onset of the pandemic had been crucial factors in facilitating, and sometimes allowing, the implementation of training activities in the emergency context:

1. the presence of an institutional mandate from the national technical-scientific committee for the realization by the ISS of national level training activities aimed at emergency management for personnel (trigger event);
2. the presence of a national organization (the ISS) formally and effectively integrated at the highest levels with international health institutions, with national institutions responsible for emergency management, with the academic world and the scientific community, and capable of managing large-scale training activities, although not the same among the Institute's elective activities;
3. the availability of a Training Office within the ISS already equipped, even if not dedicated to these issues, with the fundamental competence and part of the human, organizational and technological resources which, although structured and sized for other contexts and situations, thanks to the collective effort and as far as feasible in a similar pandemic context, has allowed, in any case quickly, the planning and implementation of specially prepared training events.
4. the skills of the different researchers present in the ISS, to which have been added those of the scientific community, mobilized in a short time, for the production of the contents of the courses, conferences and reports.

In addition to the human resources who have been able to develop and manage all the training activities, among the resources already available which have proved to be decisive in addressing emergency training immediately, the EDUISS platform is undoubtedly to be highlighted. It was also crucial the possibility of immediately having an online learning platform that could face – however structured and conceived for the management of a more limited number of users and in the absence of certainty regarding its ability to “handle” a high number of users at the same time – the emerging training challenge of the moment.

However, it emerged that the experiences previously carried out in training programs for the management of emergencies, such as the course “Outbreak investigation” have proved to be underpowered since the beginning of the epidemic to address the management training on the pandemic, caused by a new agent, highlighting the need for a national strategy for planning emergency training of a wider vision and scope, contemplating reproducibility in other contexts.

One of the many pieces of information collected during the analysis of the final report of the Training WG effectively summarizes this theme: “The absence of a structure that could bring together, with some automatism, all the competences of the country was dramatically evident in those days.”

In fact, the training of health personnel during an emergency risks to be late and less effective if not facilitated by a pre-existing organizational planning and not supported by the existence of a professional institutional “reference” dedicated to plan and manage the same.

What showed to be complex to activate in the onset phase of the emergency, also due to the very nature of an unknown agent pandemic, was in summary both a specific “alarm” mechanism for training and a preordained response system and already articulated in its essential lines, and that integrates training as a structural part of the emergency response planning process.

The lack of a solid pre-established strategy for training dedicated to the health emergency, both in terms of preparation and response, even if limited to the realistically predictable a priori aspects of COVID-19, has in fact amplified the widespread dimension of uncertainty given by the presence of an epidemic completely unknown to humans and which massively characterized the first weeks of the pandemic in particular.

However, the presence at the ISS SF of pre-existing models ready for the delivery, for example, of FAD events, whose immediate availability and operation, also thanks to the provisions of the Quality System in use, was fundamental in this regard, and made it possible to carry out training events in otherwise impossible times.

It is also appropriate to enhance how the presence of already existing interconnections and relationships by the ISS with the WHO, the ECDC, the Ministry of Health, the Universities and the scientific world has allowed both the rapid recruitment of teaching staff consisting of the main reference experts for specific sectors, and the activation of communication channels for the collection and dissemination of information.

However, it should be noted that the communication, both internal and external, in the specific context of the full emergency crisis and the relative uncertainty regarding the absence of precise references about the nature of the viral pathology, presented some critical issues, despite all the efforts and the activities implemented (21). Effective and correct communication at all levels, in such contexts, is in fact one of the main elements that need to be supervised and, in some way, already prepared previously (22).

The dissemination of the training offer was partly limited by a relative lack of the necessary technical equipment at the peripheral level. In fact, the COVID-19 emergency has put a strain on the Italian technological infrastructure. During the emergency, there was an exceptional consumption of bandwidth, with traffic peaks due to the amount of people who worked and studied from home, with the widespread use of broadcasting and dissemination on the network via streaming.

However, this critical scenario also presented elements of interest and / or strength. The urgent need to find quality information on COVID-19 from workers, in the absence of residential courses, together with the forced stay at home, have led to an extraordinary influx of users on the EDUISS platform, which has registered peaks in new accounts and of enrolments in FAD courses never occurred before. It should be emphasized that, although the management of support requests from users has been very onerous, this is presumably due more to the number of users themselves than to the digital divide. In fact, the requests for support were not qualitatively very different from those usually processed by the SF. Furthermore, after the first weeks of delivery, given the number of users and the critical issues connected to bandwidth consumption at national level, the SF has gradually opted for “lighter” teaching structures and materials, precisely to facilitate their use and contain the pressure of requests for support.

Among the objective and external factors that influenced participation in the courses, in addition to the digital skills and resources mentioned, the fragmentation of the potential catchment area both in terms of

“contractual” and the obligation to obtain CME credits is still to be highlighted. In fact, in some cases it has been possible for the healthcare personnel employed by the NHS to activate staff recruitment strategies by the LHUs and hospitals, with objective fewer opportunities for promoting the training activities carried out for affiliated healthcare professionals - General Practitioners (GPs), Primary Care Paediatrician (PCPs) and Internal Outpatient Specialists - and, to an even lesser extent, for private sector healthcare professionals. Other difficulties arose at the same time due to the possibility of participation in courses by operators outside the continuing education system (CME) such as, for example, CHW, social workers, as well as students in the health sector to whom it was possible to offer only the materials didactic of the realized FAD courses.

The criticalities highlighted regarding the uneven possibility of adhering to training proposals during the emergency by the various types of workers active both in health care and in the more general field of public health, have made the role of involvement of the community in the preparation of the training offer in similar circumstances.

The multi-professional and multidisciplinary nature of the health workers active during the emergency were in fact so varied as to make it impossible to structure, in the “top-down” approach dictated by the context and the timing of the emergency, of a training offer that could immediately respond in a capillary way to the various training needs according to the different specific methods of use.

With a view to preparing for similar future emergencies, the need emerged for a preordained strategy of community involvement that could first of all allow an analysis of the training needs of operators, but also offer a voice not only to those who actively work in the field, but also to the “community” more generally.

A partial response to this need was however put in place by the ISS both with the creation of online seminars and WGs and with the activation of some communities of practice that have proved to be rich in teaching and for promotion and experimentation in the future of new training methodologies.

The lack of a structured survey of the training needs due to the tumultuous occurrence of events and the general uncertainty of the initial moment was partially filled by the various WGs, who collected the perceived needs of the workers in different ways, thus allowing to emerge some useful elements for the future preparation of training courses.

Among the main elements that emerged, it is worth mentioning in the first place the need for a common and shared language and definitions, a necessary substrate for operational communication in emergency contexts and the effective structuring of any healthcare response, a primary need which was largely satisfied by the training offer made.

On the other hand, what was most lacking, especially in the early stages of the emergency, was the response to the training needs of workers in the multiple territorial scenarios (23) of our health system (GPs / PCPs, outpatient specialists, care operators domiciliary, LTCFs, hospice, psychiatric services, intermediate care, etc.) due to the prevailing initial polarization of the structured training offer for the more strictly hospital management of the epidemic, dictated by the immediate urgency of response to the numerous and growing critical cases in this context.

Also, in this circumstance it was necessary to put in place some experimental initiatives mainly through the activity of some webinars and WGs and the elaboration of the related reports that could somehow fill the need for support of the workers of these contexts.

Appendix B contains the summary sheets with the technical indications provided to facilitate their replication: B1. Technical indications for classroom training events; B2. Technical indications for FAD courses; B3. Technical indications for remote conference organization (scientific meetings); B4. Technical indications for remote courses organization; B5. Technical guidelines for conducting a TNA on COVID-19; B6. Indications for the rapid production of documents to be published.



## Recommendations

At the end of the analysis and discussion process, the Training Working Group has drawn up the following **recommendations based on the existing literature for the preparedness** and countering emergencies, updated based on the experience during the COVID-19 emergency and on the current context of the country:

- a) develop a National Program dedicated to the training of health and community health workers, as well as Public Administrations for the management of the COVID-19 epidemic in the post-emergency phase and epidemic / pandemic emergencies, identifying specific levels and requirements for training also based on of the recommendations of the WHO.
- b) pre-order and set up a structured national communication network system, dedicated to training “for emergencies and in emergencies”, and articulated at the regional level with adequate human, organizational and technological resources and with the identification of clear responsibilities, tasks and functions as well as precise alarm and activation mechanisms of the system.
- c) promote and implement the potential of the infrastructures and technology dedicated to emergency healthcare training, developing specific reference levels and requirements and guaranteeing operators the capillary use at national level at hospital and territorial level
- d) consolidate a reference group of expert trainers and facilitators in the health emergency sector and promote tools for the rapid recruitment of sector experts also through collaborations and partnerships with the NHS, universities, private social and profit organizations.
- e) make available “basic” and “ready-to-use” training packages for specific skills dedicated to healthcare and non-healthcare professionals (short lessons concerning for example hand washing, positioning of masks or the use of specialized life-saving equipment such as invasive and non-invasive ventilation).
- f) promote and strengthen training for the managerial level of the NHS and public administrations, dedicated to public health emergencies, with particular regard to the territorial level, enhancing the mixed courses tested by the ISS both for the complementation of training methodologies (in presence, remote, field work) as well as for the participation of figures from different areas of the country in order to share the best experiences, optimizing them.
- g) rethink the training events planned by providing new priorities that can assess the implications of the COVID-19 emergency in the various issues in public health as well as for everything that is not COVID-19.

In summary, all the findings could be answered in the establishment of a body without barriers for training in national public health, made up of consolidated realities and supported by innovative technologies for FAD. A “widespread training centre”, not with a single physical location or with a permanent and residential teaching staff from a single institution, but consisting of a “hub and spoke” network of accredited institutional and individual providers from the academic world and the scientific community who can collaborate in a flexible and coordinated way in the management and implementation of a unitary training project dedicated to emergencies.

The ISS will be able to represent the promoting center of this reality, constituting its equal server, with precise functional characteristics and enhancing the resources already present and activated during this emergency.

### **Lessons learned**

1. Training in mass health emergencies is a requirement of prevailing institutional, national and regional competence.
2. Training in mass health emergencies must necessarily be planned *a priori*.
3. Training in mass health emergencies must have adequate programs, resources, standards and suitable technological / digital resources already prepared in advance (preparedness) and scalable in the emergency phase.
4. Training in mass health emergencies must be carried out by competent bodies, structures and subjects, identified *ex ante* and activated promptly according to specific strategies (who does what) already prepared at national and local level.
5. Training in mass health emergencies must have adequate and efficient communication systems and technological / digital infrastructures and based on consolidated institutional, scientific and social relationships.
6. Training in mass health emergencies must include strategies for the active involvement of the communities concerned (scientific world, workers / recipients, the general population).

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## **Appendix A**

### **Timeline and synoptic prospectus**





## A1. Timeline “COVID-19 and Training”

	Month	Day	COVID	Training	
2019	OCT	1/10		Course Blended Outbreak: start of E-learning section	
		29-31/10		Start of in-class course, Outbreak course	
	NOV	1-30/11		Start of Field Training, Outbreak course	
		17/11	First positive COVID-19 case		
	DEC	1-12/12		Outbreak course: drafting and sending of project works	
		13/12		Outbreak course in ISS: Returns of projects and conclusions	
27/12		Vision Medicals laboratories detect part of a new coronavirus genome			
2020	JAN	1/1	Closing of Wuhan market		
		9/1	First confirmed death in Wuhan of a 61-year-old man		
		20/1		Proposal of Darwin statement for COVID in China	
		24/1		Impossibility to start an e-learning in China (due to language, culture and emergency situation)	
		30/1	<ul style="list-style-type: none"> <li>- WHO declaration of global health emergency</li> <li>- First 2 COVID cases and Chinese people at the Spallanzani Hospital</li> </ul>		
		31/1	Italian declaration of emergency		
	FEB	2/2	Shi Zhengli decodes the genome of the virus		
		3/2	Established at the Civil Protection the technical-scientific Committee for the emergency		
		5/2	Zhang Yongzhen sequences the virus and sends the results to the GenBank database		
		8/2		Training Office starts its work	
		9/2		Analysis of scientific literature - Identification of the WHO course	WHO: start of course on COVID-19
		10/2		<ul style="list-style-type: none"> <li>- Developing of first online course on SARS-CoV-2 emergency</li> <li>- Request from Europe to set up a course for preparedness for next EU countries</li> </ul>	
		11/2	COVID-19: official name from WHO		
	FEB	14/2			AGENAS introduces the ad-hoc subject for COVID-19
		21/2	First Italian case in Codogno		
22/2		Red zones: Codogno and Vò	Development of the online SARS-CoV-2 course: beginning, tutorial registrations, first unit	Start of COVID-19 course (FNOMCE)	

Month	Day	COVID	Training
MAR	4/3	Universities and schools stop activities in presence	h 19:00 Unit 2 online SARS-CoV-2 course starts (63.000 registered)
	6/3		
	7/3		Recordings and interviews Allegranzi (WHO) and Puro (Spallanzani)
	8/3	Red zones: Lombardia etc.	<p>Online SARS-CoV-2 course: (80.467 registered)</p> <p>Unit 3 starts: online SARS-CoV-2 course (92.500 registered)</p> <p>Setting for healthcare professions</p> <p>Setting for materials for NGP courses</p> <p>Materials/handouts for online course (OSS and MIGEP)</p> <p>Online course "Prevenzione e controllo delle infezioni (ICP)" starts</p> <p>Registrations for the online SARS-CoV-2 course close after the 200.000 registered.</p> <p>Registration reopening for the online SARS-CoV-2 course</p> <p>Online course on COVID-19 and Dialysis patient starts</p> <p>online SARS-CoV-2 course ends (215.857 registered)</p> <p>Online COVID-19 elements for contact tracing course starts</p> <p>Start of Micro Learning ISS-ECDC "Mother-infant health in the context of COVID-19"</p>
	9/3	Lockdown in Italy	
	11/3		
	12/3		
	18/3		
	20/3		
	27/3		
30/3			
APR	10/4		
	15/4		
	21/4		
	28/4		
	29/4		
MAY	4/5	Lockdown ends in Italy	
	7/5		
	11/5		
	18/5	Productive activities restart	
	25/5		
	29/5		

## A2. Synoptic prospectus of ISS FAD events for COVID-19

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Between 28 February and 30 May 2020, the Distance Learning (*Formazione a Distanza*, FAD) group of the Training Office (*Servizio di Formazione*, SF) of the ISS designed built and delivered, in co-organization with other structures or institutions inside and outside the ISS and making use of the collaboration of many experts, remote training courses on the topic of the new coronavirus SARS-CoV-2.

The issues addressed are broadly related both to the institutional response methods in emergencies, as well as on prevention and protection strategies from infection, and on clinical management issues of groups of patients or for particular pathological conditions.

For all courses, two side blocks have also been provided with links for further information: the first refers to specific resources on the subject on institutional websites (Ministry of Health, ISS, ECDC and WHO); the second with the infographics “COVID-19 Italy - Monitoring the situation” of the Department of Civil Protection which offer a constantly updated picture on the progress and spread of the infection.

All FAD courses were delivered through the ISS EDUISS platform <https://www.eduiss.it>. The material of some courses was also distributed through other channels.

The number and type of recipients have been expanded in the course of disbursement to respond to requests that have gradually been expressed to the ISS, reaching a wide audience of recipients.

The FAD courses, while maintaining in their formal articulation the characteristics of the EDUISS FAD courses, have been adapted in the methodology, in some cases simplifying the articulation of the problem-based learning method (PBL) or the delivery methods of the individual teaching resources, to respond to development needs but often also to fruition.

Table 2.1, attached to this Appendix A2, summarizes the FAD courses carried out by the ISS for the COVID-19 emergency.

### ***FAD course “Health emergency from new coronavirus SARS-CoV-2: preparation and contrast”***

The course was organized by the Presidency, the SF and the DMI of the ISS, and made available from February 28 to April 28, 2020 on the EDUISS platform and open to all CME professions.

This is the first FAD course on the issue of the COVID-19 health emergency that the ISS has made available, accepting the invitation of the Ministry of Health task force to carry out specific training on the emergency. The course, created according to the standard of the courses offered on the EDUISS platform, made use of the collaboration of over 50 experts in the field.

The times for the planning, preparation and opening of the course were necessarily very short and the course was set up in less than 3 weeks compared to an average of three months necessary to create a FAD course open to thousands of users. The WHO course (Emerging respiratory viruses, including COVID-19: methods for detection, prevention, response and control), which was the first course made available on the subject, was taken as a reference for the formulation of some learning objectives and for the method used for issuing the teaching units on a weekly basis.

The course was made available in a progressive way: divided into three teaching units, made available in succession, on a weekly basis (28 February, 6 March and 13 March). The general objective was to allow health professionals to appropriately deal with the health emergency due to the new coronavirus SARS-CoV-2 by making use of available scientific evidence and official sources of information and updates.

The course was for a duration of 16 hours.

Each learning unit contained:

- Scenario based on a realistic scene in relation to the themes of the course or unit, useful for activating the learning process and applying the acquired knowledge;
- Study material (documents selected or prepared ad hoc by the experts) for the acquisition of basic knowledge on the topics covered in the course;
- Tutorial i.e. recorded audio slides that represent the synthesis of the main elements of discussion and study of the course or unit;

- Pre- e post-test self-assessment for questions within the competence of the learning unit;
- End of unit certificate test

The course was open for free; accredited for all health professions (all disciplines) with the special theme of the NHS and Regional Health Service and of an urgent and / or extraordinary character identified by the National Commission for Continuing Education and by the Regions / Autonomous Provinces to deal with specific health emergencies with acquisition of technical-professional notions, recognizing 20.8 CME credits

The teaching method used is active, asynchronous, with low interaction, inspired by the principles of problem-based learning (PBL), in which individual participants are activated by defining and achieving their own objectives by acquiring new elements of knowledge and new skills for solving the problem itself. This choice was considered a priority in consideration of the multiplicity of users and the impossibility of carrying out a Training Needs Assessment, and in order to favour the individual possibility for each participant to define their own specific learning objectives in the initial phase of the course and to stimulate the pursuit of one's own unique solution, with the support of the teaching materials provided in the Units, of particular value in consideration of the local differences in the application of the learning.

The planning of the course involved the writing of a project which was then shared and endorsed by the Department of Civil Protection and the Management of the Ministry of Health.

Interest in the course has grown over the weeks of delivery, so much so that a strong increase in the number of participants is necessary. The course was also required for other types of recipients (universities; third sector; operators from countries in transition) as shown below and in the summary sheet attached to Appendix A2.

### ***FAD Course “Prevention and control of infections during the COVID-19 emergency”***

The course was offered on the FAD ISS platform in three distinct editions to allow one to reach different targets:

- Healthcare professionals with CME profile (All professions and disciplines, 6.5 CME credits) - course delivered from 30/03/2020 to 28/09/2020;
- Social workers - CNOAS accreditation, issued from 3/4/2020 to 28/9/2020;
- Community health workers (CHW) - course provided from 3/4/2020 to 28/9/2020.

The course was designed by adapting and integrating the WHO course: “Infection Prevention and Control (IPC) for novel coronavirus (COVID-19)” to the Italian context.

The overall learning objective was to provide transversal skills useful in limiting the person-to-person transmission of SARS-CoV-2 by putting into practice the infection prevention and control (PCI) measures recommended by the WHO. A succession of reading materials and tutorials (i.e. video lessons commented by the teachers) were made available to the students, organized in 8 modules.

The course is accompanied by two tests with training purposes (entrance test and self-assessment post-test) to allow the learner a self-assessment of what has been learned and a final certification test for the evaluation of the passing of the course.

The delivery of the course (development of the contents and production on the platform) took about two weeks with staff of the SF dedicated full time to its preparation.

### ***FAD course “Novel Coronavirus (SARS-CoV-2) health emergency: preparedness and response” and “Préparation et réponse à l’urgence sanitaire du nouveau Coronavirus SARS-CoV-2” for healthcare professionals from Countries with limited resources***

The ISS on 10 February 2020 received the request from the European Commission, through the coordinator of the Medilabsecure network which includes 22 countries (not belonging to the EU) of North Africa and the Sahel, Middle East, Balkans and Black Sea, to contribute to preparedness in relation to the COVID-19 emergency. In this sense, the President of the ISS linked the working group of the National Centre for Global Health with the Training Service with the idea of adapting the material of the FAD course “SARS-CoV-2”, with subsequent translation into English and French for the countries of the MediLabSecure network.

Preliminarily, a survey was carried out among the countries of the network which revealed the interest in distance learning on the subject, but the potential difficulty of a course to be used through a dedicated platform for problems

relating to the Internet connection emerged (availability, stability, costs, etc.). Distance training was therefore hypothesized via a dedicated platform, with training material that can be downloaded and therefore more usable off-line.

The training activity for countries with limited resources took the form of a project in which the planning and implementation phase of the remote training course was launched, which included the following phases:

- adaptation of the course to make it usable in different countries, where Italy remains as a case study (including the expansion of the website, bibliography, reading materials)
- translation of the course in English and French and creation of pdf handouts for download
- request to the countries of the MediLabSecure network for the list of health personnel and trainers interested in training
- creation of courses on the EDUISS platform for each of the two versions, in English and French
- creation of a dedicated e-mail box for technical-scientific support

The course, made available in English and French, was offered internationally to 22 countries in transition.

### ***FAD Course “Healthcare emergency on COVID-19: elements for contact tracing”***

The course was organized by the Presidency, the SF, the DMI and the National Center for Innovative Technologies in Public Health of the ISS and made available from 28 April to 14 July 2020 on the EDUISS distance learning platform of the ISS.

It is a FAD course reserved for public health operators who carry out contact tracing activities in the health emergency due to the new coronavirus SARS-CoV-2 in support service or in the NHS (Personnel of the Prevention Department, General Practitioners, staff territorial medicine doctor and other professionals on duty for the implementation of contact tracing).

While aware of the interest and potential usefulness of opening the course to all healthcare professionals, this restriction was necessary to ensure access to personnel engaged in the field in contact tracing activities. In this sense, a self-certification form has been prepared for the requirements.

The course is available for 20,000 participants with different professional profiles: surgeons (at least 50%), health assistants, biologists, dieticians, prevention technicians in the environment and in the workplace, veterinarians, nurses, paediatric nurses, social workers.

The general objective is to provide useful elements for the training of health personnel, who work in public health and prevention contexts, on the procedures to be implemented for contact tracing, in order to guarantee a homogeneous approach on the national territory.

### ***FAD courses on COVID-19 emergency and specialist management***

As part of a scientific collaboration agreement between the ISS and the FISM, a distance training course was developed for the management of the new coronavirus in a specialist field.

For the planning of the courses, a working group was set up made up of ISS experts and methodologists and FISM experts who carried out the training activities. From the comparison between the experts, a training course was designed with the aim of making available to clinicians working in specialized sectors the reflection on the clinical experience gained in the field by the various experts and clinicians belonging to associations and scientific societies accredited at the Ministry of Health. The need was to find training spaces for discussion and continuous updating so that critical elements could be addressed but also the strengths to be used in the management of the COVID-19 emergency and to mitigate its possible clinical impact, using experience clinical data, clinical epidemiology data, documentation made available by accredited institutions and studies in the scientific literature.

For this purpose, the classic PBL format used in EDUISS has been adapted:

- 5 hours of training
- a very simplified stimulus problem, to be presented in textual format only, with 3 to 5 specific objectives useful for reaching a solution to the problem
- the option of an internal forum for discussion between participants and experts

- CME accreditation for specific professional figures
- contents to be developed in coherence with a situation of considerable fluidity and indeterminacy, contextualizing the information / statements with reference to published scientific works, documentation from ISS and other national and international organizations, experience in the field.
- survey of the reference website so that it was possible for the participants to update the information
- News bulletin board to transmit documents, important updates related to the course contents
- short delivery times of the course: 2/3 months to allow participants to follow the course but also to stimulate them to use the information in a time suitable for their immediate application and for the fact that they have information that is quickly updated, with the possibility of extending the disbursement period.
- From a technical point of view, simplification of materials to overcome technical problems of the participants; audio recording remotely and even by non-expert readers, in some cases giving up high quality audio.
- Insertion of information on prevention common to the various courses

The recipients of the courses were identified in specialties of interest to the topics.

The FAD courses, in asynchronous mode, with low or medium interaction, carried out are:

- "COVID-19 Health Emergency: Dialed Patient Management, Medium Interaction (Forum of discussion) – 9 CME credits. Delivery 21 April 2020 - 14 July 2020
- "Health emergency COVID-19 and Psycho-Oncology. Skills to be integrated into clinical practice", low interaction – 6,5 CME credits. Delivery 11 May 2020 - 14 July 2020
- "COVID-19 Health Emergency: Dental Patient Management", Low Interaction – 6.5 CME credits. Delivery 29 May 2020 – 27 July 2020

Two other FAD courses on COVID-19 emergency and nutrition and COVID-19 emergency and gender differences are also under development.

For the development of the courses, preliminary meetings were organized by videoconference with the scientific managers of the event for the definition of the learning objectives and to agree on working methods, resources to be produced and production times. E-mail, telephone and short video conference updates were organized according to the material development needs.

On average, the courses were developed in 15-21 days with a very fast pace both by the FAD working group and by the experts for the preparation and revision of the materials.

The main criticality in the supply phase was related to the rapid saturation of available places, an aspect that creates a certain discontent in the participants who cannot access and also creates considerable access to the e-mail support service.

The strong point is the considerable satisfaction of the course, both for the theme and for the aspects of technical use.

### ***University course and medical internships***

Through an agreement between ISS and Sapienza University of Rome, both the FAD course "Health emergency from new coronavirus SARS-CoV-2: preparation and contrast" and the FAD course "Prevention and control of infections in the context of the COVID-19 emergency" were issued to the CRUI (Conference of Rectors of Italian Universities) for distribution in the university environment, in particular to students and trainees. The Prime Ministerial Decree of 8 March 2020, had in fact suspended the internships in the medical area while the courses for doctors in specialist training and the internship activities of the health professions continued, subject to the provision of personal protective equipment. Student training was therefore necessary to facilitate good practices, disseminate knowledge about COVID-19 and minimize the risk of exposure to the virus without the appropriate knowledge, among students who were completing internship hours.

All the material was shared with the students of all Italian universities through the national commissions of the Conference of Health Professions. In particular, the research group that coordinated the university distribution of the course sent the guideline to the board of the Permanent Conference of Healthcare Professions, and each President and Vice-President of the individual commissions sent the guideline for access to the President and Didactic Directors of the Study Programs of Italian Universities.

For the delivery of the course in the university environment:

- The free Google Classroom platform was used;
- A specific e-mail address has been created to administer the courses and also useful for providing support to students;
- 120 twin classes were generated, containing the course and the guideline for enrolment.

### ***Material for trainers of NGOs, the third sector and development cooperation workers***

During the delivery of the FAD course “Health emergency from new coronavirus SARS-CoV-2: preparation and contrast”, the SF has received multiple requests for participation from socio-health operators and third sector entities and cooperation in the development involved in the emergency who could not be accredited as they do not belong to the health professions.

The didactic material of the “FAD SARS-CoV-2 Course” has been adapted in order to be able to distribute it in a handout format for the training of trainers from other organizations and the third sector. For the management and distribution of the training material, the collaboration of the National Centre for Global Health of the ISS was used and the following steps were envisaged:

- adaptation of the FAD course materials for the creation of pdf handouts for download
- creation of a questionnaire with Microsoft Forms to collect basic information to be filled in before being able to access a link to download the entire handout
- creation of a link from GARR to transfer the file, with feedback on the number of downloads
- creation of an e-mail box from which to send the link to the questionnaire and any updates



## A2.1. Summary table of the FAD course produced by the ISS for emergency COVID-19 emergency

Course title and recipient editions	No. Of units Formative hours	General Objectives
<p>Health emergency from new SARS-CoV-2 coronavirus: preparation and contrast</p> <ul style="list-style-type: none"> <li>▪ EDITION for all CME professions</li> <li>▪ EDITION for healthcare personnel from countries with limited resources (English and French) with 9 training hours</li> <li>▪ EDITION for University students</li> <li>▪ EDITION distributing materials for third sector organizations and development cooperation workers</li> </ul>	<p>3 units 16 hours</p>	<ol style="list-style-type: none"> <li>1. Describe the nature of the international health emergency and identify prevention and control strategies in this emergency</li> <li>2. Identify the actors of the Italian task force for the management of the health emergency and the official sources of information, updating and coordination for health procedures related to the management of the health emergency</li> <li>3. Describe the case definition of novel SARS-CoV-2 coronavirus and identify protocols to be implemented for the prevention, identification and management of suspected or confirmed cases of SARS-CoV-2 coronavirus (including description of laboratory investigations and protection for healthcare personnel)</li> <li>4. Identify information on the SARS-CoV-2 coronavirus useful to medical / health personnel for prevention, identification, control activities in clinical settings</li> </ol>
<p>Infection Prevention and control in the context of the COVID-19</p> <ul style="list-style-type: none"> <li>▪ EDITION for all CME professions</li> <li>▪ EDITION for social workers</li> <li>▪ EDITION for support workers</li> <li>▪ EDITION for University students</li> <li>▪ EDITION for NGO and third sector material distribution</li> </ul>	<p>1 unit 5 hours</p>	<ol style="list-style-type: none"> <li>1. Define the role of infection prevention and control in the context of "preparedness", "readiness" and describe the response to an infectious emergency</li> <li>2. Describe the current epidemiological situation for COVID-19, case definition and close contact, signs and symptoms of the disease</li> <li>3. Describe the measures (personal protection, patient isolation and environmental measures) to be taken in healthcare facilities in the presence of confirmed or suspected cases of COVID-19 to avoid transmission to healthcare professionals and patients</li> <li>4. Describe the measures to be implemented and recommended to people for fiduciary home isolation</li> </ol>
<p>COVID-19 Health Emergency: Elements for Contact Tracing</p> <ul style="list-style-type: none"> <li>▪ EDITION for surgeons, health assistants, biologists, dieticians, prevention technicians in the environment and in the workplace, veterinarians, nurses, paediatric nurses</li> <li>▪ EDITION for social workers</li> </ul>	<p>1 unit 5 hours</p>	<ol style="list-style-type: none"> <li>1. Identify the elements to be used for the implementation of a contact tracing system effective in limiting the circulation and spread of COVID-19 infection</li> <li>2. Describe the potential elements deriving from available technologies and / or to be developed and / or adapted to support and integrate contact tracing systems</li> <li>3. Identify the main potentials and limits of the legislation on the processing of personal data and respect for privacy in the implementation of contact tracing systems.</li> </ol>
<p>COVID-19 Health Emergency: Management of the dialysis patient</p> <ul style="list-style-type: none"> <li>▪ EDITION for Surgeons, Nurses, Paediatric Nurses</li> </ul>	<p>1 unit 5 hours</p>	<ol style="list-style-type: none"> <li>1. Identify the basic epidemiological and clinical elements that characterize the COVID-19 infection and the methods to be implemented to limit the spread of the infection in patients undergoing haemodialysis treatment</li> <li>2. Identify dedicated pathways to manage the various types of haemodialysis patients during the COVID-19 emergency</li> <li>3. Describe the possible impact of COVID-19 infection on kidney function and potential emerging problems related to this occurrence</li> </ol>
<p>COVID-19 health emergency and Psycho-Oncology. Skills to be integrated into clinical practice</p> <ul style="list-style-type: none"> <li>▪ EDITION for Surgeons, Psychologists, Nurses, Paediatric Nurses</li> </ul>	<p>1 unit 5 hours</p>	<ol style="list-style-type: none"> <li>1. Identify and define clinical and management strategies for carrying out psychological interventions with cancer patients, those who take care of patients and health professionals in relation to the COVID-19 emergency</li> </ol>
<p>COVID -19 health emergency: management of the dental patient</p> <ul style="list-style-type: none"> <li>▪ EDITION for Surgeon (Maxillofacial Surgery discipline), Dentist, Dental Hygienist</li> </ul>	<p>1 unit 5 hours</p>	<ol style="list-style-type: none"> <li>1. Identify the available means, procedures and behavioural rules suitable for containing the risk of contagion from SARS-CoV-2 in the dental scenario.</li> </ol>



### A3. Synoptic table of remote scientific meetings

The organization of the “Wednesday Scientific Meetings” on the new coronavirus, which began on January 29, 2020, were progressively transformed from “real” in the classroom to “real” in the classroom with social distancing, then from the first teleconference connections to made alone conference and, finally, to the current model, the result of the combination of one hundred teleconferencing stations with a thousand additional in streaming mode. For this purpose, a few organizational meetings between the Training Service, the Scientific Communication Service, the Press Office and the Scientific Secretariat were sufficient to set up the model.

The topics of the technical-scientific meetings held from 29 January to 27 May 2020 were, in chronological order:

1. Virus identification
2. Epidemiological notes
3. Taking charge of the patient and prevention of nosocomial risk
4. Prevention and control
5. Mathematical models for estimates relating to the transmission of nCov infection
6. Disinfection of aircraft
7. Schools and coronavirus
8. Management of aircraft from countries affected by health emergencies of international importance
9. Tools for the training of health personnel
10. Self-assessment tools for risk in asymptomatic people
11. Prevention and control of infections in the care of patients with new COVID-19 in healthcare facilities
12. Communication initiatives: Ten behaviours to follow
13. Coronavirus and animals
14. Operator protection devices
15. Monoclonal antibodies and coronavirus vaccines: state of the art
16. Flowchart for identification and management of suspected cases
17. State of the art of the circulars on COVID-19 management
18. The contribution of the general practitioner
19. Data base for reporting cases
20. The management of the exposed worker
21. Prevention of ongoing COVID-19 infections
22. Telemedicine and support for actions to combat the spread of COVID-19
23. Urban waste problems in the time of COVID-19
24. How areas least affected by COVID-19 may be ready for an effective response
25. Technical and practical indications for the management of COVID-19 patients in home isolation
26. The role of health care management in COVID-19
27. First evidence on COVID-19 mortality in Italy
28. Indications for the rational use of protections in healthcare activities in the current epidemic scenario of COVID-19
29. Indications for the prevention and control of COVID-19 in health care facilities
30. COVID-19 in pregnancy, childbirth and breastfeeding
31. Recommendations for the correct collection, storage and analysis of swabs for diagnosis and confirmation of COVID-19
32. Facial masks for medical use
33. COVID-19: psychological impact on the general population and healthcare workers
34. Monitoring of 118 activities in Lombardy during the COVID-19 pandemic
35. National surveillance on the COVID-19 contagion in residential and social-health structures
36. Update of the COVID-19 report on the use of personal protective equipment for social and health workers
37. Update of the pathological and anatomical data of COVID-19
38. Epidemiological investigations on healthcare workers in the course of COVID-19
39. Second National Surveillance Report on COVID-19 contagion in residential and community health structures
40. COVID-19 mortality data update
41. Indoor air quality in healthcare facilities, homes, schools and workplaces in time of COVID-19
42. Scientific update for healthcare professionals: COVID contents
43. Update of epidemiological notes
44. Contact tracing: contact research and management of COVID-19 cases
45. Contact tracing, experiences compared
46. SARS-CoV-2 and companion animals: interim indications to ensure public health and animal health and welfare

47. Correct procedure for the execution of the nasopharyngeal swab
48. General medicine in phase 2 of the COVID-19 epidemic: organizational and assistance news
49. Regional plan for COVID-19 surveillance screening in the Campania Region
50. Health surveillance and COVID-19 control in the ASL of Taranto
51. Hand hygiene between antibiotic resistance and COVID-19
52. Investigation on the spread of COVID-19 within the LTCFs of the Autonomous Province of Trento
53. COVID-19 emergency: interventions for residential care in the Umbria region
54. Scientific update for healthcare professionals: the COVID contents
55. Mathematical models, reproduction numbers and monitoring of COVID-19 in Italy
56. Impact of Phase 2 in the hospital organization
57. Contact tracking: not just apps.
58. Presentation of the INAIL / ISS technical document on the hypothesis of remodeling the containment measures of the infection from SARS-CoV-2 in the catering sector
59. Interim indications on the containment of SARS-CoV-2 infection and food hygiene in the catering and food administration
60. SARS-CoV-2 provincial plan for the reactivation of the Territorial Social Services: minors, people with disabilities, refugees, homeless and more
61. The experience of LTCF "ITG" for the containment of COVID-19
62. Preparing for COVID-19 in the slaughtering and meat processing industry
63. Retrospective analysis of the COVID-19 epidemic: practical suggestions from the Cremona experience
64. Outpatient management of the patient with COVID-19

### **Webinars on COVID-19 and LTCFs**

As part of the initiatives the ISS is carrying out for the containment of COVID-19, six videoconferences (webinars) have been organized for the LTCFs, every two weeks (Monday and Thursday), during which various issues have been addressed to promote discussion on the prevention and control of SARS-CoV-2 infection.

To make the online seminar interactive, it was possible to send questions to an e-mail address, to which the speakers responded after the speeches, directly during the online seminar, or by e-mail. The documents and videos of the webinars have been downloaded on average more than a thousand times. Data on streaming connections averaged 800 for each online seminar.

Below are the topics addressed during the webinars, in chronological order:

1. SARS-CoV-2 and COVID-19: characteristics of the virus and clinical manifestations of the disease, etc.
2. Role of infection control for COVID-19
3. Additional precautions: droplet, contact, airborne. Personal protective equipment: how to wear them and how to remove them
4. Standard Precautions - Hand Hygiene. Respiratory Hygiene
5. Medical devices for protection, personal protective equipment and risk assessment
6. Educational materials: where to find them
7. The update of the ISS COVID-19 Report "The prevention and control of COVID-19 in residential social and health facilities: Key message"
8. The structural limits and the organization of clean and dirty routes. The way of isolating guests with suspected or confirmed COVID-19 case
9. Waste management and disposal
10. Management of indoor environments
11. Guest's personal hygiene. Mobilization, nutrition, elimination: how to manage them
12. Clinical care monitoring
13. Relational and spiritual needs in the assistance of residents, family members and operators and at the end of life
14. Alternative methods for communication between patients in isolation and care providers

### **Webinars on COVID-19 and rare diseases**

A similar initiative has been activated for rare diseases. The Scientific Secretariat, through the COVID-19 Rare Diseases Working Group, organized six webinars from 21 April to 27 May 2020, on a weekly basis during which various issues were addressed to promote discussion on prevention and the control of SARS-CoV-2 infection. Also, on this

occasion, to make the online seminar interactive, it was possible to send questions to an e-mail address, to which the speakers responded directly during the seminar online, or subsequently via e-mail.

To ensure the widest participation in the events, the Italian Federation of Rare Diseases (UNIAMO) spontaneously provided streaming on Facebook direct. Patients, health workers and professionals from our country and from 11 other European and non-European countries participated, including Argentina and the United Arab Emirates. The European Commission has given wide dissemination, through its channels, to the webinar programs. In total, the six webinars averaged around 4500 views and 9500 interactions, considering live shares.

The issues addressed during the webinars are listed below in chronological order:

1. Epidemiological notes
2. Presentation of the results of the Questionnaire "The needs of rare patients during the COVID-19 emergency"
3. Tools for scientific updating for health professionals: COVID reports, infographics, COVID contents
4. The management of rare anemias: the clinician's point of view
5. Interim indications for appropriate support for people with G6PD enzymopenia (favism) in the current SARS-CoV-2 emergency scenario
6. Interim indications for the prevention and management of indoor environments in relation to the transmission of the SARS-CoV-2 virus infection
7. Testimony of the Kawasaki Syndrome Association "Rare but Special"
8. Kawasaki syndrome and acute inflammatory syndrome in pediatric age at the time of COVID-19: the commitment of the Istituto Superiore di Sanità
9. WHO recommendations for hand hygiene at the time of COVID-19
10. Testimony of the Italian Association of Patients of Acquired Dysimmune Neuropathies (CIDP Italia ONLUS)
11. Chronic immune-mediated neuropathies
12. Guillain-Barré syndrome
13. What implications and recommendations for rare patients?
14. The commitment of the Regions for rare diseases in time of the COVID-19 pandemic
15. The impact of the SARS-CoV-2 pandemic on rare and complex connective tissue diseases: the European perspective of ERN ReCONNET
16. Testimony of patients with rare and complex connective tissue diseases
17. The commitment of the Regional Coordination of Rare Diseases of the Tuscany Region in time of COVID-19

## A4. Synopsis prospectus of the ISS COVID-19 Reports

Here is the list of ISS COVID-19 Reports produced by the ISS during the first months of the emergency. Reports represent a valuable updating tool for healthcare personnel, produced urgently in response to the actual information needs of field workers and other specific targets.

As of May 31, 2020, in about three months, 50 reports have been produced (Table A4.1.) And others are in the process of being published. Many reports have been subject to revision, some have also been translated into English and Spanish. All reports are available from: <https://www.iss.it/rapporti-COVID-19>, <https://www.iss.it/rapporti-iss-COVID-19-in-english> and from <https://www.iss.it/rapporti-iss-COVID-19-en-espaol>. In addition to the commitment of our researchers, the long editorial experience of the ISS in the production of ISTISAN Reports has benefited, which made it possible to maintain editorial rigor even in urgent and remote production.

**Table A4.1. ISS COVID-19 reports as of 31 May 2020**

no.	Author (Working group or person)	Title	Version			
			Last	Prev.	tot.	EN
1/2020	Prevention and control of infections	<i>Interim guidance for carrying out isolation and home health care in the current COVID-19 context</i>	7/3		1	
2/2020 Rev. 2	Prevention and control of infections	<i>Interim guidance for a rational use of protections for SARS-CoV-2 infection in health and social health activities (assistance to subjects affected by COVID-19) in the current SARS-CoV-2 emergency scenario.</i>	10/5	14/3 28/3	3	
3/2020 Rev. 2	Environmental Waste	<i>Interim guidance for the management of municipal waste in relation to the transmission of SARS-CoV-2 virus infection.</i>	31/5	14/3 31/3	3	
4/2020 Rev.	Prevention and control of infections	<i>Interim guidance for prevention and control of SARS-COV-2 infection in long-term care facilities</i>	17/4	16/3	2	X
5/2020 Rev. 2	Environment and indoor air quality	<i>Indications for the prevention and management of indoor environments in relation to the transmission of SARS-CoV-2 virus infection.</i>	25/5	23/3 21/4	3	
6/2020	Causes of death	<i>Procedure for carrying out diagnostic tests in patients who died with SARS-CoV-2 infection.</i>	23/3		1	
7/2020	Biocides and environmental waste	<i>Recommendations for the disinfection of outdoor environments and road surfaces for the prevention of transmission of SARS-CoV-2 infection.</i>	29/3		1	
8/2020 Rev.	ISS National Autism Observatory	<i>Interim guidance for appropriate support of people on the autism spectrum in the current SARS-CoV-2 emergency scenario</i>	30/4	30/3	2	
9/2020	Environmental Waste	<i>Interim guidance on the management of sewage sludge for the prevention of the spread of the SARS-CoV-2 virus.</i>	3/4		1	
10/2020	Environmental Waste	<i>Interim guidance on water and sanitation in relation to the spread of the SARS-CoV-2 virus</i>	7/4		1	
11/2020 Rev. 2	Microbiological diagnostics and surveillance	<i>Recommendations for the correct collection, storage and analysis on the oral / rhino-pharyngeal swab for the diagnosis of COVID-19</i>	29/5	7/4 17/4	3	
12/2020	Gabbielli <i>et al.</i>	<i>Interim provisions on telemedicine healthcare services during COVID-19 health emergency</i>	13/4		1	X*
13/2020	Translational search	<i>Recommendations for collection, transport and storage of COVID-19 biological samples</i>	15/4		1	X
14/2020	Rare diseases	<i>Interim guidance for the appropriate support of people with enzymopenia G6PD (favism) in the current SARS-CoV-2 emergency scenario</i>	14/4		1	X
15/2020	Medicines	<i>Risks related to the online purchase of medicines for prevention and therapy of COVID-19 and to the dissemination of fake news on social networks</i>	16/4		1	X
16/2020	Veterinary Public Health and Food Safety	<i>Pets and SARS-CoV-2: what you need to know, how to behave.</i>	19/4		1	
17/2020	Veterinary Public Health and Food Safety	<i>Interim guidance on food hygiene during the SARS-CoV-2 virus epidemic.</i>	19/4		1	
18/2020	Translational search	<i>Recommendations for the collection and analysis of data disaggregated by sex related to incidence, manifestations, response to therapies and outcomes in COVID-19 patients</i>	26/4		1	X
19/2020	Biocides	<i>Interim recommendations on disinfectants in the current COVID-19 emergency: medical-surgical aids and biocides.</i>	25/4		1	
20/2020 Rev.	Prevention and control of infections	<i>Interim guidance for the sanitation of indoor environments in the healthcare and assistance context to prevent the transmission of SARS-CoV 2</i>	14/5	8/5	2	
21/2020	Ricci <i>et al.</i>	<i>Guide for the prevention of Legionella contamination in the water systems of tourist accommodation facilities and other buildings for civil and industrial use, not used during the COVID-19 pandemic.</i>	3/5		1	
22/2020 Rev.	Emergency and Mental Health	<i>Interim guidance for the appropriate support of the health workers in the SARS-CoV-2 emergency scenario</i>	28/5	7/5	2	X

no.	Author (Working group or person)	Title	Version			
			Last	Prev.	tot.	EN
23/2020	Emergency and Mental Health	Guidance for an intervention program of the Departments of Mental Health for the management of the impact of the COVID-19 epidemic on mental health.	6/5		1	
24/2020	Rare diseases	Interim guidance for the appropriate support of adrenal insufficiency in children during the current SARS-CoV-2 pandemic emergency	10/5		1	X
25/2020	Biocides	Interim recommendations on the sanitation of non-health facilities in the current COVID-19 emergency: surfaces, interiors and clothing.	8/5		1	
26/2020	Environmental waste	Interim guidance on the management and disposal of disposable masks and gloves from domestic and non-domestic use.	18/5		1	
27/2020	Ricci <i>et al.</i>	Guidance for the prevention of Legionella risk in dental units during the COVID-19 pandemic.	17/5		1	
28/2020	Diagnostic tests and medical devices	In Vitro Diagnostic Devices for COVID-19. Part 1: legislation and types.	18/5		1	
29/2020	Rare diseases	Interim guidance on Kawasaki disease and acute multisystem inflammatory syndrome in children and adolescents in the current emergency scenario of SARS-CoV-2 infection	21/5		1	X
30/2020	Emergency and Mental Health	Information on first-level telephone intervention for personalized information and the activation of population empowerment in the COVID-19 emergency.	14/5		1	
31/2020	Emergency and Mental Health	Interim indications for second-level psychological telephone support in the health sector in the COVID-19 emergency scenario	26/5		1	
32/2020	Veterinary Public Health and food safety	Interim indications on the containment of the SARS-CoV-2 contagion and on food hygiene in the field of catering and food administration.	27/5		1	
33/2020	Environmental waste	Indications on ventilation / air conditioning systems in non-health community facilities and in domestic environments in relation to the spread of the SARS-CoV-2 virus.	25/5		1	
34/2020	Bioethics	Territorial surveillance and protection of public health: some ethical and legal aspects	25/5		1	
35/2020	Bioethics	The General Practitioner and the COVID-19 pandemic: some aspects of ethics and organization	25/5		1	
36/2020	Environmental waste	Information on bathing activities, in relation to the spread of the SARS-CoV-2 virus	31/5		1	
37/2020	Environmental waste	Indications for swimming pools, as per the Agreement 16/1/2003 between the Minister of Health, the Regions and the Autonomous Provinces of Trento and Bolzano, in relation to the spread of the SARS-CoV-2 virus	31/5		1	
38/2020	Silano <i>et al.</i>	Interim indications for adequate management of people with celiac disease in the current SARS-CoV-2 emergency scenario.	29/5		1	
39/2020	Rare diseases	Census of needs (23 March - 5 April 2020) of people with rare diseases in the ongoing SARS-CoV-2 pandemic	30/5		1	
40/2020	Bioethics	Emergency communication in COVID-19 departments. Aspects of ethics	25/5		1	
41/2020	Emergency and Mental Health	ISS working group. Indications for taking care of the difficulties and needs of family members of patients admitted to COVID-19 hospital wards	29/5		1	
42/2020	Bioetica	Protection of personal data in the COVID-19 emergency.	28/5		1	
43/2020	Emergency and Mental Health	ISS working group. Interim guidance for appropriate mental health support in minors during the COVID-19 pandemic.	31/5		1	
44/2020	Emergency and Mental Health	Indications of an intervention program for the management of anxiety and perinatal depression in emergency and post-emergency COVID-19	31/5		1	
45/2020	Giusti <i>et al.</i>	Interim indications for pregnancy, childbirth, breastfeeding and care of the very young 0-2 years in response to the COVID-19 emergency.	31/5		1	
46/2020	Diagnostic tests and medical devices	In Vitro Diagnostic Devices for COVID-19. Part 2: market evolution and information for stakeholders.	23/5		1	
47/2020	Bioethics	Research ethics during the COVID-19 pandemic: observational and especially epidemiological studies.	29/5		1	
50/2020	Perilli <i>et al.</i>	Contribution of technological innovation to the safety of diabetic patients to be subjected to fundus examination in times of COVID-19.	31/5		1	
<b>Totale</b>					<b>62</b>	<b>11</b>

prev.: Previous version; tot.: total versions; EN: version in English.  
\* version in Spanish

Another updated tool implemented by the ISS mainly for healthcare professionals is represented by COVID Contents, article reviews and pre-prints on COVID made by ISS researchers in various thematic areas. 8 volumes have been produced for more than a thousand pages <https://www.iss.it/COVID-contents>.



## **Appendix B**

### **Technical information worksheets**





## B1. Technical guidance for classroom training events

Element	How to develop it	Note
<b>Specificity</b>	Implementation of classroom training programs supplemented by distance and field training events, according to the mixed approach.	The planning of on-site training courses, in the preparedness phase, represents a real management strategy to be implemented for health emergencies
<b>Methodology</b>	<p>Andragogic approach that places the professional at the centre of the training process.</p> <p>Detect learning needs.</p> <p>Formulate achievable goals that meet the real needs of the individual professional.</p> <p>Define a learning project, based on a series of interrelated actions.</p> <p>Implement the program. Adopt the PBL.</p> <p>Evaluate the program by measuring the knowledge and skills acquired.</p>	<p>Centrality of the role of the participant.</p> <p>Redefining the role of the teacher as a facilitator.</p> <p>“Climate” of the reception room and sharing of knowledge</p>
<b>Interaction</b>	<p>Constant with the participants.</p> <p>Systematics for all participants in the training program (management, teachers / facilitators / tutors, secretaries).</p> <p>Interactive teaching: work in small groups, presentation and discussion of a clinical case, individual and group exercises, role-play</p>	The preparation of coordination moments between the Course Direction, the Scientific Secretariat, the Technical-organizational Secretariat and the Teachers in order to create an integrated training course that meets the learning objectives set in light of the training needs and expectations of the participants ensures maximum effectiveness
<b>Participants</b>	<p>Maximum number of participants no more than 30 people with the following characteristics:</p> <p>Socio-health professionals with different skills, belonging to public and affiliated structures, as well as voluntary and third sector organizations, where they work in close interconnection with public services.</p>	An effective didactic-training approach must be able to promote multidisciplinary and multisectoral work (teamwork and network work) in the context of classroom training
<b>Preparing participants</b>	<p>Welcome the participants.</p> <p>Listening to the expectations and motivations that prompted the professional to carry out the training course.</p> <p>Detecting training needs through surveys, observations, interviews, focus groups, people / user satisfaction questionnaires</p>	The assessment of training needs must precede the planning / implementation of training activities.
<b>Teaching</b>	<p>Modules of 8-16 hours of theoretical-practical training to be distributed over a maximum of three days</p> <p>Management of the lesson with presentation of the case-problem, work in small groups / exercises, presentation in the plenary, didactic summary of the expert / teacher, discussion in the plenary</p> <p>Summary, at the end of the day or of the module, of what emerged during the works.</p>	Didactics structured in this way favors the development of both the cognitive and relational spheres; it also stimulates education and training processes and not just training and instruction
<b>Organizational aspects</b>	<p>Adequate spaces to allow the distribution of the participants in a circle and to carry out the exercises.</p> <p>Appropriate classroom equipment (microphones, PC, projector).</p> <p>CME accreditation for healthcare professionals and CNOAS for social workers.</p>	An adequate physical setting (width and lighting of the classroom, efficient technical equipment) is a guarantee of well-being for the entire group being trained
<b>Communication channels</b>	Activation of an effective communication that, in addition to the didactic training contents (verbal channel), also takes care of the relational aspects (paraverbal and non-verbal channel) that define and give meaning to the contents	Pay attention to the paraverbal and non-verbal of all participants in the training program.
<b>Evaluation</b>	<ul style="list-style-type: none"> <li>▪ reactions</li> <li>▪ learning</li> <li>▪ behaviours</li> <li>▪ results</li> </ul>	Evaluation represents an area of great complexity as a rigorous control of the variables is required in order to demonstrate that the change that has occurred is due to the training process implemented.

## B2. Technical guidance for FAD courses

Element	How to develop it	Note
<b>Methodology</b>	Use active methodologies, in line with the principles of andragogy (e.g. learning by problem)	Only within appropriate teaching strategies can new technologies favour the learning process. There is evidence of greater effectiveness of active teaching methods
<b>Interaction</b>	Preferably, to structure courses with medium and high interaction between participants and between participants and tutors. Create small or medium groups of participants (from 5 to 15)	There is evidence of greater effectiveness of interactive environments. Need to create active and effective self-learning environments
<b>Technology</b>	Learning Management System (LMS) Regulations: CME, Open source, Accessibility. Flexibility. Alignment with the organizers' learning model ex. Totara Learn Hosting: scalability according to the turnout, considering the resistance with thousands of simultaneously active users. Double daily backup. Security systems. GDPR adherence	Use cooperative learning environments for the sharing of knowledge and the active involvement of learners, according to the principles of constructivism. Encourage the autonomous activity of the participants in an environment rich in resources and stimuli.
<b>Preparing participants</b>	Participant guidance on methods and techniques used, software and hardware requirements, course structure and calendar, logistical aspects, assessment and credit allocation systems ... Provide communication tools to answer any doubts: technical support, address or email, FAQ	Beware of the digital divide! The teaching method and the tools of the platform must not become an obstacle
<b>Learning material</b>	Attention to accessibility. Limit animations and elaborate graphics so as not to burden the loading and display of the page. Limit the use of colours. Self-consistency: coherent, finished, clear materials, NOT in need of additional explanations	Consider online reading: different concentration than reading on paper - scan - searching for key words and basic concepts. Capture the reader's attention within about 10-15 seconds.
<b>Video and other multimedia resources</b>	Use only materials that are useful for achieving the training objectives. Produce short and concise video interviews. Use presentations commented verbally by the teacher NO full video of the speaking teacher (extraneous cognitive load) Images and videos functional to learning (representative, organizational, interpretative) and NOT just decorative	Consider that in multimedia communication the principle "more multimedia, more learning" is NOT valid
<b>Channels of communication</b>	Instruction guides Forum - appropriate strategies Messaging Synchronous activity Email Support - Clarify auto-reply support policies	Pay attention to the type of communication: Absence of paralinguistic aspects; Lack of immediate feedback information; Language contractions and ideographic expedients (emoticons)
<b>Monitoring</b>	Monitoring must be continuous in order to control the efficiency, effectiveness and quality of the training process.	The purpose is not only that of control, but also the possible modification / optimization of the process in progress.
<b>Evaluation</b>	Multiple choice questionnaires, 4 answers, 1 correct one, presentation of questions and answers in random order. Check that the questions: are clear, are not partially correct, do not contain double negatives, are in line with the materials.	Correct answers must be available ONLY at the end of the course. Consider other forms of assessment aligned with teaching models.

### B3. Technical guidance for remote scientific meetings

Element	How to develop it	Note
<b>Methodology</b>	Follow and respect the principles underlying andragogy and in particular: make clear the link between the learning contents and the use that the descendant can make of it in their work. Respect the dimension of independence and autonomy of the adult learner in order to avoid a resistance to learning. Place the emphasis on experiential techniques, because they are more capable of making learning by enhancing the experience of the learners. Prospect the links between one's own discipline and the dimensions of competence, in order to synchronize learning experiences with didactic tasks. Leverage motivational factors (updating linked to the latest scientific knowledge, self-esteem, personal satisfaction, sense of duty, etc.)	Knowledge of the participants' curricula at the beginning of the training experience
<b>Timing</b>	Interventions by experts should not exceed 20 minutes	The role of the moderator is important in managing the pace of distance learning
<b>Interaction</b>	Create interactive meetings. The meeting represents an active formative moment and must lead people to interact, to participate, to offer their contribution. Consider the meeting as a social event to create networks between professionals, not a simple transmission of content	Even if the non-verbal component is quite contained (usually limited to the bust, face and hands), pay attention to facial expression and para-verbal language: tone, volume, rhythm, accents and dialects. It is important to include all visual, auditory and kinaesthetic details to increase the likelihood of making contact with all participants
<b>Technology</b>	Know well the virtual space (the meeting platform) that is being used and which represents the symbolic space, the set of technological boundaries that determine the meeting Example: Starleaf	Keep in mind that the slides appear remotely with a few seconds delay
<b>Preparing participants</b>	Prepare the calendar and program of the meetings, communicate in time connection systems and evaluation systems. Provide communication tools to answer any doubts: technical support for connection, dedicated mail Q / A, FAQ	Create dedicated website, shared folder and chat between participants
<b>Learning materials</b>	Make the presentations of the speakers available within a few days of the presentation	Ask the teachers for a release
<b>Video and other multimedia resources</b>	Provide for the video to be made available for those who attended and for guests who were unable to attend.	Possible availability of access to databases
<b>Channels of communication</b>	Provide communication tools to answer any questions: provision of dedicated emails; reading on devices (e.g. tablets) during meetings and direct response during the event by the speakers	Collection and evaluation of access criticalities and other problems expressed through the dedicated email
<b>Evaluation</b>	Prepare multiple choice questions, 4 answers, 1 correct one, presentation of questions and answers in random order. Verify that the questions: are clear, are not partially correct, do not contain double negatives, are in line with the materials	Validate the prepared questionnaire

## B4. Technical guidance for remote scientific meetings

Element	How to develop it	Note
<b>General guidance</b>	Design effective, efficient, “attractive” and CME accredited courses	
<b>Timing</b>	The interventions of expert teachers cannot exceed 20 minutes. Prohibition of interventions > 30 consecutive minutes.	On-screen attention skills evidence <20 minutes
<b>Methodology</b>	Use active methodologies, in line with the principles of andragogy (e.g. learning by problem) Participants' interventions will be solicited and stimulated by also evaluating the individual participation times within the small learning group	Only within appropriate teaching strategies can new technologies favour the learning process. Higher efficacy evidence of active teaching methods
<b>Interaction</b>	Preferably structure courses using virtual classrooms (allowing access to WGs of between 7 and 12 participants)	Evidence on greater effectiveness of environments in which it is possible to express oneself individually and in the group context
<b>Technology</b>	Regulations: CME, Flexibility based on the model identified Alignment with the organizers' learning model. The virtual classrooms can be inserted within EDUISS allowing the optimized use of the two different tools Examples: Starleaf, Teams, Teleskill, Blue bottom, Blackboard	All are, to varying degrees, able to encourage the activity of the participants also by sharing the screen
<b>Preparing participants</b>	Participant guide on fruition methodology; initial sharing of a course calendar, Provide communication tools to answer any doubts.	Attention to the digital divide
<b>Learning material</b>	Capture the reader's attention within about 10-15 seconds Limit animations and elaborate graphics so as not to burden sharing and viewing of the page Limit the use of colours	Consider reading on the web: different concentration than reading on paper, keyword research and basic concepts
<b>Video and other multimedia resources</b>	Possibility for participants to use the tools provided only in relation to the achievement of the training objectives. Produce short and concise video interviews. Use presentations Images and videos functional to learning	Consider that in multimedia communication the principle “more multimedia, more learning” is NOT valid
<b>Channels of communication</b>	The classroom space to which it is possible to add that offered by the EDUISS platform	Pay attention to the type of communication: Absence of paralinguistic aspects; Lack of immediate feedback; Language contractions and ideographic expedients (emoticons)
<b>Monitoring</b>	Tracking should be preferred based on production by material targets.	The presence of facilitators of the learning process is essential throughout the training process
<b>Evaluation</b>	The evaluation can be carried out on the products made by the participants on the basis of predetermined indicators Further tests (MCQ) can be planned % Of evaluation on individual work and% on tasks entrusted to the working group (Project work) should be suggested	A formative peer evaluation phase is preferred, followed by the necessary certification evaluation if the release of CME / UCF credits etc. is foreseen.

## B5. Technical guidance for conducting a TNA COVID-19

TNA Questionnaire*	How to develop it	Note
<b>Structure of questionnaire/questions</b>		
a. <i>Existence of critical gaps between the resources and skills that it would have been necessary to possess (expected) and those possessed (observed).</i>	Indicate which major gaps you have found in your personal experience. 1 = minimum; 2 = average; 3 = maximum.	
b. <i>The need for planning that, starting from the analysis of the available resources, defines the related activity plans</i>	Indicate the level of availability and appropriateness of the resource you had. 1 = non existent; 2 = existence not known; 3 = existence not activated	
c. <i>Need to share a training course oriented and aimed at the knowledge of the Danger (Covid19), which generated the emergency.</i>	Indicates the level of knowledge of the danger posed by the N-Cov 19 1 = minimum; 2 = average; 3 = maximum.	The aim is to collect useful data for the design of further FAD courses on COVID-19.
d. <i>Need to share a training course oriented and aimed at the knowledge of exposure risk and vulnerability facilitating the development of the emergency.</i>	Indicates the level of knowledge of the risk from exposure and vulnerability to N-Cov 19 1 = minimum; 2 = average; 3 = maximum.	
e. <i>Need to share a training course oriented and aimed at getting to know the operational context.</i>	Indicates the level of knowledge of the operational context for combating COVID-19 1 = minimum; 2 = average; 3 = maximum.	
<b>Methodology and technology</b>	Share the definition of the training needs on COVID-19 with the field operators who attended the FAD course "Health emergency from the new coronavirus SARS-CoV-2: preparation and contrast". The questionnaire will be inserted within the course itself and will be created with the "feedback" tool of the LMS Totara learn 11. Only one compilation will be allowed. The data will be extracted in Excel format for subsequent analysis.	The compilation will be allowed to all students, whether or not they have completed the course. This will allow you to stratify the data on groups of participants, divided on the basis of progress in the course.
<b>User sample</b>	The questionnaire will be administered to all participants in the FAD course "Health emergency from new coronavirus SARS-CoV-2: preparation and contrast"	Subscribers will be invited to fill in the Questionnaire through subsequent messages via the News bulletin board, therefore from within the course itself.
<b>Timing</b>	The questionnaire will be made available starting July 28, 2020 - three months after the end of the course. It will be possible to complete it by August 28, 2020	Send 2 reminders: 15 and 7 days before closing. Sending via news bulletin board

\* TNA Training Needs Assessment

## B6. Guidance for quick production of documents to be published

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In times of emergency, the rapid production of technical documents intended mainly for healthcare workers is increasingly necessary, accompanied by the production of informative documents intended for different target populations (children, elderly, workers in specific sectors, etc.).

The **general recommendation** is to resort to the use of both technical and informative documentation, already produced by accredited sources (e.g. Ministry of Health, ISS, WHO, ECDC, etc.), made freely available online. If this documentation is not considered sufficient or appropriate for local contexts, some basic rules are reported, in case you want to take the path of a self-made publication.

### BASIC RULES FOR PUBLISHING

**Targets.** It is absolutely essential to have clear the objectives of the publication and to which target it is addressed because this determines the choice of contents and the communication methods.

**Authorship.** It must always be clear who is responsible for the publication (author / institution) who assumes responsibility for the scientific content of the document and its dissemination. Insert the institution's logo in a clearly recognizable position.

**Citation of the source.** If information produced by others is used, the source must be cited, making sure that what is reproduced is freely usable (copyright).

**Control over the scientific content.** Often in emergencies, we are faced with situations of uncertainty and it is more important than ever to be sure that the information we are going to disseminate is verified, updated and not contradictory with respect to scientific evidence and current legislation. In many cases, for example, the ISS COVID Reports were produced as interim documents, often updated even in the short term, in accordance with the changed scenarios of the epidemic. It is recommended to share the document among expert groups (for careful expert review) prior to publication.

**Opportunity assessment.** In addition to the scientific content, it is appropriate to consider the implications of another nature associated with the contents to be disseminated ("political" opportunity, possible alarmism, distorted use, possible conflicts of interest, etc.), make the necessary considerations and obtain authorization for publication by institutional leaders before its dissemination.

**Structure of a technical document.** It is advisable to give the document a structure that guarantees its readability and ease of use (e.g. Descriptive and brief title, clear definition of the target, insertion of glossaries or lists of acronyms, summaries, index, introduction structure, sections / subsections, recommendations endings, bibliographic references). The iconographic part (Tables and Figures) must be well cared for, complete, coherent, legible and clear, without forcing the reader to make an effort of interpretation. In any case it is important to reread and have more people re-read the text before publication.

**Disclosure documents.** Documents of a popular nature also require careful control of the scientific content and communication aspects, which are often underestimated (use of words, images, colours, graphics, legibility, balance between the parts, etc.). The advice is to always be supported by communication experts and share the publication with other colleagues and institutional top management before dissemination.



## 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>

1. Gruppo di lavoro ISS Prevenzione e controllo delle Infezioni. *Indicazioni ad interim per l'effettuazione dell'isolamento e della assistenza sanitaria domiciliare nell'attuale contesto COVID-19*. Versione del 24 luglio 2020. Roma: Istituto Superiore di Sanità; 2020 (Rapporto ISS COVID-19, n. 1/2020 Rev.)
2. Gruppo di lavoro ISS Prevenzione e controllo delle Infezioni. *Indicazioni ad interim per un utilizzo razionale delle protezioni per infezione da SARS-CoV-2 nelle attività sanitarie e sociosanitarie (assistenza a soggetti affetti da COVID-19) nell'attuale scenario emergenziale SARS-CoV-2*. Versione del 10 maggio 2020. Roma: Istituto Superiore di Sanità; 2020 (Rapporto ISS COVID-19, n. 2/2020 Rev. 2)
3. Gruppo di lavoro ISS Ambiente e Gestione dei Rifiuti. *Indicazioni ad interim per la gestione dei rifiuti urbani in relazione alla trasmissione dell'infezione da virus SARS-CoV-2*. Versione del 31 maggio 2020. Roma: Istituto Superiore di Sanità; 2020 (Rapporto ISS COVID-19, n. 3/2020 Rev. 2)
4. Gruppo di lavoro ISS Prevenzione e controllo delle Infezioni. *Indicazioni ad interim per la prevenzione e il controllo dell'infezione da SARS-CoV-2 in strutture residenziali sociosanitarie*. Versione del 17 aprile 2020. Roma: Istituto Superiore di Sanità; 2020 (Rapporto ISS COVID-19, n. 4/2020 Rev.) Available also in English.
5. Gruppo di lavoro ISS Ambiente e Qualità dell'aria indoor. *Indicazioni ad per la prevenzione e gestione degli ambienti indoor in relazione alla trasmissione dell'infezione da virus SARS-CoV-2*. Versione del 25 maggio 2020. Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19, n. 5/2020 Rev. 2).
6. Gruppo di lavoro ISS Cause di morte COVID-19. *Procedura per l'esecuzione di riscontri diagnostici in pazienti deceduti con infezione da SARS-CoV-2*. Versione del 23 marzo 2020. Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19, n. 6/2020).
7. Gruppo di lavoro ISS Biocidi COVID-19 e Gruppo di lavoro ISS Ambiente e Rifiuti COVID-19. *Raccomandazioni per la disinfezione di ambienti esterni e superfici stradali per la prevenzione della trasmissione dell'infezione da SARS-CoV-2*. Versione del 29 marzo 2020. Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19, n. 7/2020).
8. Osservatorio Nazionale Autismo ISS. *Indicazioni ad interim per un appropriato sostegno delle persone nello spettro autistico nell'attuale scenario emergenziale SARS-CoV-2*. Versione del 30 aprile 2020. Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19, n. 8/2020 Rev.).
9. Gruppo di Lavoro ISS Ambiente – Rifiuti COVID-19. *Indicazioni ad interim sulla gestione dei fanghi di depurazione per la prevenzione della diffusione del virus SARS-CoV-2*. Versione del 3 aprile 2020. Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19, n. 9/2020).
10. Gruppo di Lavoro ISS Ambiente-Rifiuti COVID-19. *Indicazioni ad interim su acqua e servizi igienici in relazione alla diffusione del virus SARS-CoV-2* Versione del 7 aprile 2020. Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19, n. 10/2020).
11. Gruppo di Lavoro ISS Diagnostica e sorveglianza microbiologica COVID-19: aspetti di analisi molecolare e sierologica *Raccomandazioni per il corretto prelievo, conservazione e analisi sul tampone oro/rino-faringeo per la diagnosi di COVID-19*. Versione del 17 aprile 2020. Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19, n. 11/2020).

12. Gabbrielli F, Bertinato L, De Filippis G, Bonomini M, Cipolla M. *Indicazioni ad interim per servizi assistenziali di telemedicina durante l'emergenza sanitaria COVID-19. Versione del 13 aprile 2020*. Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19, n. 12/2020). Available also in English.
13. Gruppo di lavoro ISS Ricerca traslazionale COVID-19. *Raccomandazioni per raccolta, trasporto e conservazione di campioni biologici COVID-19. Versione del 15 aprile 2020*. Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19, n. 13/2020). Available also in English.
14. Gruppo di lavoro ISS Malattie Rare COVID-19. *Indicazioni ad interim per un appropriato sostegno delle persone con enzimopenia G6PD (favismo) nell'attuale scenario emergenziale SARS-CoV-2. Versione del 14 aprile 2020*. Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19, n. 14/2020). Available also in English.
15. Gruppo di lavoro ISS Farmaci COVID-19. *Indicazioni relative ai rischi di acquisto online di farmaci per la prevenzione e terapia dell'infezione COVID-19 e alla diffusione sui social network di informazioni false sulle terapie. Versione del 16 aprile 2020*. Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19, n. 15/2020). Available also in English.
16. Gruppo di lavoro ISS Sanità Pubblica Veterinaria e Sicurezza Alimentare COVID-19. *Animali da compagnia e SARS-CoV-2: cosa occorre sapere, come occorre comportarsi. Versione del 19 aprile 2020*. Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19, n. 16/2020).
17. Gruppo di lavoro ISS Sanità Pubblica Veterinaria e Sicurezza Alimentare COVID-19. *Indicazioni ad interim sull'igiene degli alimenti durante l'epidemia da virus SARS-CoV-2. Versione del 19 aprile 2020*. Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19, n. 17/2020).
18. Gruppo di lavoro ISS Ricerca traslazionale COVID-19. *Raccomandazioni per la raccolta e analisi dei dati disaggregati per sesso relativi a incidenza, manifestazioni, risposta alle terapie e outcome dei pazienti COVID-19. Versione del 26 aprile 2020*. Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19, n. 18/2020). Available also in English.
19. Gruppo di lavoro ISS Biocidi COVID-19. *Raccomandazioni ad interim sui disinfettanti nell'attuale emergenza COVID-19: presidi medico-chirurgici e biocidi. Versione del 25 aprile 2020*. Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19, n. 19/2020).
20. Gruppo di Lavoro ISS Prevenzione e Controllo delle Infezioni. *Indicazioni ad interim per la sanificazione degli ambienti interni nel contesto sanitario e assistenziale per prevenire la trasmissione di SARS-CoV 2. Versione del 14 maggio 2020*. Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19, n. 20/2020 Rev.).
21. Ricci ML, Rota MC, Scaturro M, Veschetti E, Lucentini L, Bonadonna L, La Mura S. *Guida per la prevenzione della contaminazione da Legionella negli impianti idrici di strutture turistico recettive e altri edifici ad uso civile e industriale, non utilizzati durante la pandemia COVID-19. Versione del 3 maggio 2020*. Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19, n. 21/2020).
22. Gruppo di lavoro ISS Salute mentale ed emergenza COVID-19 *Indicazioni ad interim per un appropriato supporto degli operatori sanitari e sociosanitari durante lo scenario emergenziale SARS-CoV-2. Versione del 28 maggio*. Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19, n. 22/2020 Rev.) Available also in English.
23. Gruppo di lavoro ISS Salute mentale ed emergenza COVID-19 *Indicazioni di un programma di intervento dei Dipartimenti di Salute Mentale per la gestione dell'impatto dell'epidemia COVID-19 sulla salute mentale. Versione del 6 maggio 2020*. Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19, n. 23/2020).
24. Gruppo di lavoro ISS Malattie Rare COVID-19. *Indicazioni ad interim per una appropriata gestione dell'iposurrenalismo in età pediatrica nell'attuale scenario emergenziale da infezione da SARS-CoV-2. Versione del 10 maggio 2020*. Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19, n. 24/2020). Available also in English.
25. Gruppo di Lavoro ISS Biocidi COVID-19. *Raccomandazioni ad interim sulla sanificazione di strutture non sanitarie nell'attuale emergenza COVID-19: superfici, ambienti interni e abbigliamento. Versione del 15 maggio 2020*. Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19 n. 25/2020)



26. Gruppo di Lavoro ISS Ambiente e Rifiuti. *Indicazioni ad interim sulla gestione e smaltimento di mascherine e guanti monouso provenienti da utilizzo domestico e non domestico. Versione del 18 maggio 2020.* Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19 n. 26/2020)
27. Ricci ML, Rota MC, Scaturro M, Nardone M, Veschetti E, Lucentini L, Bonadonna L, La Mura S. *Indicazioni per la prevenzione del rischio Legionella nei riuniti odontoiatrici durante la pandemia da COVID-19. Versione del 17 maggio 2020.* Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19, n. 27/2020).
28. Gruppo di Lavoro ISS Test Diagnostici COVID-19 e Gruppo di Lavoro ISS Dispositivi Medici COVID-19. *Dispositivi diagnostici in vitro per COVID-19. Parte 1: normativa e tipologie. Versione del 18 maggio 2020.* Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19 n. 28/2020)
29. Gruppo di lavoro ISS Malattie Rare COVID-19. *Indicazioni ad interim su malattia di Kawasaki e sindrome infiammatoria acuta multisistemica in età pediatrica e adolescenziale nell'attuale scenario emergenziale da infezione da SARS-CoV-2. Versione 21 maggio 2020.* Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19, n. 29/2020). Available also in English.
30. Gruppo di lavoro Salute mentale ed emergenza COVID-19. *Indicazioni sull'intervento telefonico di primo livello per l'informazione personalizzata e l'attivazione dell'empowerment della popolazione nell'emergenza COVID-19. Versione del 14 maggio 2020.* Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19 n. 30/2020)
31. Gruppo di lavoro Salute mentale ed emergenza COVID-19. *Indicazioni ad interim per il supporto psicologico telefonico di secondo livello in ambito sanitario nello scenario emergenziale COVID-19. Versione del 26 maggio 2020.* Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19 n. 31/2020)
32. Gruppo di lavoro ISS Sanità Pubblica Veterinaria e Sicurezza Alimentare COVID-19. *Indicazioni ad interim sul contenimento del contagio da SARS-CoV-2 e sull'igiene degli alimenti nell'ambito della ristorazione e somministrazione di alimenti. Versione del 27 maggio 2020.* Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19, n. 32/2020).
33. Gruppo di Lavoro ISS Ambiente-Rifiuti COVID-19. *Indicazioni sugli impianti di ventilazione/climatizzazione in strutture comunitarie non sanitarie e in ambienti domestici in relazione alla diffusione del virus SARS-CoV-2. Versione del 25 maggio 2020.* Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19, n. 33/2020).
34. Gruppo di Lavoro Bioetica COVID-19. *Sorveglianza territoriale e tutela della salute pubblica: alcuni aspetti etico-giuridici. Versione del 25 maggio 2020.* Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19 n. 34/2020). Available also in English.
35. Gruppo di Lavoro Bioetica COVID-19. *Il Medico di Medicina Generale e la pandemia di COVID-19: alcuni aspetti di etica e di organizzazione. Versione del 25 maggio 2020.* Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19 n. 35/2020)
36. Gruppo di Lavoro ISS Ambiente-Rifiuti COVID-19. *Indicazioni sulle attività di balneazione, in relazione alla diffusione del virus SARS-CoV-2. Versione del 31 maggio 2020.* Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19, n. 36/2020).
37. Gruppo di Lavoro ISS Ambiente-Rifiuti COVID-19. *Indicazioni per le piscine, di cui all'Accordo 16/1/2003 tra il Ministro della salute, le Regioni e le Province Autonome di Trento e Bolzano, in relazione alla diffusione del virus SARS-CoV-2. Versione del 31 maggio 2020.* Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19, n. 37/2020).
38. Silano M, Bertinato L, Boirivant M, Pocchiari M, Taruscio D, Corazza GR, Troncone R *Indicazioni ad interim per un'adeguata gestione delle persone affette da celiachia nell'attuale scenario emergenziale SARS-CoV-2. Versione del 29 maggio 2020.* Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19, n. 38/2020).
39. Gruppo di lavoro ISS Malattie Rare COVID-19 *Censimento dei bisogni (23 marzo - 5 aprile 2020) delle persone con malattie rare in corso di pandemia da SARS-CoV-2. Versione del 30 maggio 2020.* Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19, n. 39/2020).
40. Gruppo di Lavoro Bioetica COVID-19. *Comunicazione in emergenza nei reparti COVID-19. Aspetti di etica. Versione del 25 maggio 2020.* Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19 n. 40/2020).

41. Gruppo di lavoro ISS Salute mentale ed emergenza COVID-19. *Indicazioni per prendersi cura delle difficoltà e dei bisogni dei familiari di pazienti ricoverati in reparti ospedalieri COVID-19. Versione del 29 maggio 2020.* Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19 n. 41/2020).
42. Gruppo di Lavoro ISS Bioetica COVID-19. *Protezione dei dati personali nell'emergenza COVID-19. Versione del 28 maggio 2020.* Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19 n. 42/2020).
43. Gruppo di lavoro ISS Salute mentale ed emergenza COVID-19. *Indicazioni ad interim per un appropriato sostegno della salute mentale nei minori di età durante la pandemia COVID-19. Versione del 31 maggio 2020.* Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19 n. 43/2020)
44. Gruppo di lavoro ISS Salute mentale ed emergenza COVID-19. *Indicazioni di un programma di intervento per la gestione dell'ansia e della depressione perinatale nell'emergenza e post emergenza COVID-19. Versione del 31 maggio 2020.* Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19 n. 44/2020)
45. Giusti A, Zambri F, Marchetti F, Sampaolo L, Taruscio D, Salerno P, Chiantera A, Colacurci N, Davanzo R, Mosca F, Petrini F, Ramenghi L, Vicario M, Villani A, Viora E, Zanetto F, Donati S. *Indicazioni ad interim per gravidanza, parto, allattamento e cura dei piccolissimi 0-2 anni in risposta all'emergenza COVID-19. Versione 31 maggio 2020.* Roma: Istituto Supriore di Sanità; 2020 (Rapporto ISS COVID-19 n. 45/2020)
46. Gruppo di Lavoro ISS Test Diagnostici COVID-19 e Gruppo di Lavoro ISS Dispositivi Medici COVID-19. *Dispositivi diagnostici in vitro per COVID-19. Parte 2: evoluzione del mercato e informazioni per gli stakeholder. Versione del 23 maggio 2020.* Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19 n. 46/2020)
47. Gruppo di Lavoro ISS Bioetica COVID-19. *Etica della ricerca durante la pandemia di COVID-19: studi osservazionali e in particolare epidemiologici. Versione del 29 maggio 2020.* Roma: Istituto Superiore di Sanità; 2020. (Rapporto ISS COVID-19 n. 47/2020), Available also in English.
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