

Checklist for hospitals preparing for the reception and care of coronavirus 2019 (COVID-19) patients

February 2020

Scope of this document

This document supports the public health preparedness planning for hospitals with regard to novel coronavirus disease 2019 (COVID-19).

This checklist is based on the current knowledge of the COVID-19 outbreak and the evidence available.

ECDC will update this checklist should new relevant information become available.

Target audience

Public health authorities and hospital administrators in EU/EEA countries and in the United Kingdom.

Background

What is COVID-19?

SARS-CoV-2, the causative agent of COVID-19, is a coronavirus. It is transmitted through large respiratory droplets and direct contact; other modes of transmission (i.e. airborne and faeco-oral) have also been proposed.

The average incubation period is estimated at 5 to 6 days, ranging from 0 to 14 days [1]. There is currently no specific treatment or vaccine against COVID-19.

More disease background information is available online ([ECDC](#) [2], [WHO](#) [3]) and in the last ECDC Rapid Risk Assessment [4].

Checklist for hospital preparedness

This checklist has been developed to support hospital preparedness for the management of COVID-19 patients. The elements described in the list may not be applicable to all hospitals and may need to be adapted to the specific characteristics of the hospital, the individual national health system, legislation and community where the hospital is located.

Elements to be assessed have been divided into the following areas:

- Establishment of a core team and key internal and external contact points
- Human, material and facility capacity
- Communication and data protection
- Hand hygiene, personal protective equipment (PPE), and waste management
- Triage, first contact and prioritisation

- Patient placement, moving of the patients in the facility, and visitor access
- Environmental cleaning

For each area mentioned above, the elements or processes were identified and the items to be checked are listed below.

A procedure for the self-auditing of compliance with this checklist should be considered.

Further information can be found in the ECDC [Health emergency preparedness for imported cases of high consequence infectious diseases](#) [5], in the WHO [Hospital emergency response checklist](#) [6], and in the CDC [Coronavirus Disease 2019 \(COVID-19\) Hospital Preparedness Assessment Tool](#) [7].

Establishment of a core team and key internal and external contact points

Element/Process	Items to check
Core team	<ul style="list-style-type: none"> • A core team for the management of the event is established; it should include a member of the hospital management, the hospital infection control team, an infectious disease expert, and experts representing the intensive care unit (ICU) and emergency room (ER) • A backup for each of the roles is established • A list with the contact details of the core team and backups is compiled; it is up to date and easily accessible • A brief and concise document describing all roles and responsibilities is prepared and centrally accessible • All the team members are informed of, and trained in, their roles and responsibilities; a contact list and documentation are centrally accessible • A place where the core team can regularly meet is identified • Adequate meeting facilities are available to the core team (e.g. meeting rooms, computers, projectors, boards, phones for teleconference, office supplies) • A procedure to keep track and control of documentation (e.g. procedures, meeting notes, training materials, etc.) is in place • A mechanism is in place to keep documentation updated and staff informed on where to find information
Key internal contact points	<ul style="list-style-type: none"> • Key internal contact points for the different roles (e.g. administration, communication, nurse administration, security, human resources, pharmacy, biosafety officer, infection control, ICU, emergency services, infectious diseases, pneumology, engineering and maintenance, laboratory, laundry, cleaning and waste management, and hospital morgue) are identified • A backup for each of the roles is established • A list with the contact details of the internal contact points and backups is compiled, up-to-date and easily and centrally accessible • All the internal contact points are informed of and trained in their role and responsibilities, and documentation is centrally accessible • Contact information from all hospital staff is updated
Key external contact points	<ul style="list-style-type: none"> • Key external contact points and their backups including necessary local/regional/national contacts (e.g. for case notification, management of cases, suppliers, other hospitals, local authorities, etc.) are identified and gathered in an easily accessible contact list, and staff involved has been made aware of it • There is a document that briefly describes when those contact points need to be contacted

Human, material and facility capacity

Element/Process	Items to check
Procurement and stock management	<ul style="list-style-type: none"> • A procurement procedure to acquire the necessary materials and supplies is in place and can be activated on short notice • Alternative suppliers have been identified if main suppliers should run out of stock (especially for personal protective equipment (PPE)) • Buffer stock of key supplies (e.g. for hand and respiratory hygiene, PPE, isolation, ICU supplies, mechanical respirators) has been acquired • A stock inventory has been conducted; there is a procedure to monitor and regularly update the inventory • A plan is in place to keep track and custody of key supplies (e.g. PPE, ventilators, cleaning and disinfection material, alcohol solution, etc.) to avoid misuse, overuse or theft
Human capacity	<ul style="list-style-type: none"> • The surge capacity of healthcare workers for triage, ER, ICU, laboratory, and the units where the patients will be placed has been assessed • The surge capacity of non-healthcare workers (e.g. administration, cleaning personnel, etc.) has been assessed • Staff absences, in particular due to sick leave or having to care for sick people at home, has been considered and included in the assessment of human resource capacity • A mechanism to monitor staff absences is in place • A sick-leave policy for symptomatic staff is in place • Thresholds that trigger the re-allocation of staff or the recruitment of new staff have been established • Staff planned to be re-allocated has been informed and trained in accordance with their anticipated roles and responsibilities • A mechanism for the recruitment, training and quick provision of all necessary administration needs as well as equipment for new staff on short notice is in place, and the budget is available and allocated • The possibility to recruit recently retired staff, military doctors, university students or volunteers has been assessed and contacts have been identified • The legal requirements to recruit temporary help (e.g. retired staff, students, etc.) are in place and training for all additional team members is planned • A plan is in place to avoid burnout among healthcare and non-healthcare workers; a maximum number of working hours will be ensured, workloads will be equally distributed, minimum rest times between shifts have been determined, as have been breaks during regular work shifts; a contact point has been appointed who can be addressed if there are problems • Psychological support for healthcare workers has been considered • There is a security team in place to ensure the safety of patients, staff and visitors and key supplies if needed • A security plan is in place to ensure safety and provide guidance for security incidents; this includes escorting personnel, patients or visitors if necessary; staff has been informed of the security plan • Possible security risks have been identified; threshold events that trigger additional resources or support from local authorities have been established

Element/Process	Items to check
Facility and material	<ul style="list-style-type: none"> • The maximum facility capacity, including the maximal number of ICU beds and mechanical ventilators (along with the required human resource capacities and supply capacity) has been calculated • There is a system to monitor bed occupancy (including the number of patients in isolation), the number of rooms used for isolation, and the number of rooms that can be potentially used for isolation • The number of patients in isolation that will, once the number reaches a certain threshold, trigger the progressive conversion of normal rooms to isolation rooms; the capacity for cohorting patients of the same disease has been calculated • The number and location of potential beds to be re-assigned as isolation rooms and a plan to re-allocate the non-isolated patients to other rooms has been established • All staff members are aware of the triggers and procedures to convert normal rooms to isolation rooms • The triggers for referring patients to other health centres or home care are established, and the staff and other centres are aware • The current stocks and the expected additional needs for different scenarios (e.g. hand and respiratory hygiene, PPE, isolation, ventilators, pharmacy, other key supplies) have been calculated • Storage facilities for additional stock have been identified; storage facilities meet all demands with respect to temperature, humidity, cold-chain, logistics, etc. • Additional areas to be transformed into waiting rooms have been identified; the threshold number of patients that would trigger the use of these areas has been estimated • If possible, access to separate toilets and drinking water faucets is available for patients in the waiting and emergency rooms • Adequate material for isolation units and ICUs is available, and disinfection procedures are in place for non-single-use supplies • An adequate amount of PPE of all sizes is available for healthcare workers and cleaning personnel • A proper amount of cleaning and disinfection products shown to be effective against coronaviruses is available • An adequate number of bins for infectious waste is available • Procedures/contracts for the treatment of an increased amount of infectious waste are in place • A procedure for the management of an increasing number of deceased patients is in place • The capacity to handle a potential increase in the number of deceased patients is calculated, and an extra stock of body bags is available • An additional place has been established that could be used as a morgue, if required, and where the custody of the bodies will be ensured • All the internal protocols, communication lines and standard operating procedures are easily and centrally accessible for all workers; all staff know where to locate them • There is a mechanism in place to ensure that equipment is in perfect working order and can be quickly replaced whenever necessary
Laboratory capacity	<ul style="list-style-type: none"> • If the hospital has no laboratory capacity, a plan for the sampling and safe shipment of specimens is established • For hospitals with in-house laboratory capacity, an appropriate amount of reagents and supplies for diagnostic testing is available; additional stockpiling should ensure uninterrupted supplies. • A plan is in place to outsource services if capacities are exceeded

Communication and data protection

Element/Process	Items to check
Internal communication	<ul style="list-style-type: none"> • An internal communication plan is established with clear communication lines to allow rapid communication to all staff and patients/visitors • Procedures are in place to communicate transparently to hospital staff, healthcare and non-healthcare workers; this procedure governs all information on the outbreak, the situation in the hospital, procedures, rules for using PPE, preventive and protection measures, changes in the procedures, and any other information related to the event • A mechanism is in place to ensure that communication to the staff and patients/visitors is checked for consistency before released

Element/Process	Items to check
	<ul style="list-style-type: none"> • Draft key messages for different groups: healthcare workers, other staff, patients, visitors, etc. A mechanism has been developed to update all involved parties • A procedure to receive feedback or questions from workers and inform about incidents is established and working • Key communication people are appointed; they are responsible for disseminating information, providing training and receiving feedback and questions. All staff members have been informed of their names, contact details and roles
External communication	<ul style="list-style-type: none"> • An external communication plan has been established, including a mechanism to ensure that communication with the media and the public are checked for consistency and approved before released • Staff members have been informed of the external communication plan • A core communication team plus backups has been appointed. They coordinate external communications • The spokesperson/s and his/her/their backups have been appointed • Draft key messages for different groups (journalists, general public, healthcare specialists, etc.) are available
Data protection	<ul style="list-style-type: none"> • There are mechanisms in place to ensure data protection in accordance with the legislation • All staff have been reminded of data protection rules • Mechanisms for tele-triage (e.g. phone, email, smartphone apps, telemedicine) conform to data protection rules

Training procedures

Element/Process	Items to check
Training	<ul style="list-style-type: none"> • A plan for the general and specific training of personnel is in place, including plans for regular training updates to refresh concepts and training for new personnel before they arrive or as soon as they arrive • All documents and procedures are easily and centrally accessible; staff has been informed where to find them • Training/information materials have been developed, in particular for: <ul style="list-style-type: none"> – Hand and respiratory hygiene – Who should use PPE: why, when and how – Internal and external communication lines and rules (both to receive and provide information) – Data protection with regard to patients – Triage procedures – Case definitions – Notification of cases – Placement and movement of patients in isolation and visitors' access – Sick-leave policy and what to do if staff members show symptoms – Security plan – Where to find the documents and training materials • All staff, healthcare and non-healthcare workers, have been informed and trained on the topics mentioned above, as required • Healthcare workers have been trained to minimise the specific risks related to the management of suspected or confirmed COVID-19 patients • Non-healthcare workers have been trained to minimise the specific risks related to their jobs, in particular the cleaning of areas occupied by a suspected or confirmed COVID-19 patient • Staff members who would have to wear PPE have been trained on its use and know the documents outlining the procedures

Hand hygiene, PPE, and waste management

Element/Process	Items to check
Hand hygiene	<ul style="list-style-type: none"> Supplies of alcohol-based hand sanitizers are available for staff and patients, especially in waiting rooms, triage rooms, examination rooms, and areas for the removal of PPE. Soap and paper handtowels are available in sufficient quantities next to all sinks (both in toilets and next to all hand wash sinks) A procedure to check and refill the supplies is established and working Instructions for the correct hand hygiene procedures have been developed and are ready to be distributed to patients, visitors, healthcare workers and cleaning personnel
PPE	<ul style="list-style-type: none"> The need for PPE has been estimated (further information can be found here). An adequate amount of PPE for protection against contact, droplet, and airborne transmission is available in different sizes where required A list of available sizes and expiry dates of the stockpiled PPE has been compiled and is up to date Healthcare workers and cleaning personnel have been trained in putting on ('donning') and taking off ('doffing') PPE
Waste management	<ul style="list-style-type: none"> The number of bins for infectious waste is sufficient to cover larger volumes There are no-touch bins to dispose of tissues used by patients in waiting and triage areas The facility is able to manage an increased amount of infectious waste by itself or outsources its waste management

Triage, first contact and prioritisation

Element/Process	Items to check
General	<ul style="list-style-type: none"> Procedures to separate suspected cases* from the other patients and isolation procedures are established, e.g. placement in different waiting rooms, use of different toilets; this also covers areas that need to be reached for water/food supplies Procedures for patient prioritisation (e.g. triage, discharge criteria, triggers to postpone elective hospitalisations or interventions) are in place and have been communicated to all staff involved Procedures are in place for the cleaning of common areas and equipment that cannot only be used by non-suspected or confirmed cases
Tele-triage	<ul style="list-style-type: none"> A tele-triage system to triage patients before they arrive at the hospital is in place: phone/email/telemedicine services are in place for possible cases; these services can also be used to coordinate the arrival of patients at the hospital if required The population has been informed about the tele-triage services of the hospital because they were informed about these services through several channels
First contact at the hospital	<ul style="list-style-type: none"> Signs and information displays at the entrance and in waiting rooms provide Q&As about COVID-19, hand hygiene and respiratory hygiene Hand hygiene supplies (e.g. alcohol-based hand sanitizers; access to water, soap and disposable paper tissues to dry hands) and respiratory hygiene supplies (e.g. disposable paper tissues) are available for staff and patients Quick checks at entry points to the emergency room, triaging of suspected cases, and severity assessment procedures are in place The hospital could provide an option for patients to wait in their cars instead of the waiting room (provided they are well enough to do so); this also requires a system to call them in All emergency room staff are aware of alternative areas to be converted into waiting rooms when a certain threshold of patients has been reached A protocol is established to inform the patients with suspected COVID-19 about certain procedures, for example that they will be separated from other patients and why; information will be provided on hand and respiratory hygiene, the use of PPE, toilet use, and how to obtain water and food The capacity for patient transportation has been assessed

* The definition of 'suspected case' may change during the event.

Patient placement, moving of the patients in the facility, and visitor access

Element/Process	Items to check
Patient placement	<ul style="list-style-type: none"> The capacity of isolation beds and ICU beds in the hospital has been assessed If the hospital has rooms with negative pressure, the maximal number of patients that can be hosted in each room according to the manufacturer has been determined The maximal capacity for the isolation of patients has been estimated: <ul style="list-style-type: none"> Maximum number of rooms that can be converted into isolation rooms (if there is increased need) has been calculated Maximum number of patients that can be cohorted in isolation rooms and number of potential isolation rooms has been calculated A plan is in place that indicates the criteria that would trigger the transformation of normal rooms into isolation rooms and also the order in which this process would be carried out; this includes a plan to re-allocate patients, facilitate their rapid discharge as soon as their clinical status allows for it, or treat patients at home The staff know the plan and have been trained accordingly, e.g. the know how to use PPE, are familiar with protocols and new tasks that they may be assigned to them, etc. Airborne infection isolation (AII) rooms have been tested and certified for their effectiveness (within the timeframe indicated by local regulations) PPE for aerosol-generating procedures are available in sufficient numbers and sizes so they can be used in the isolation rooms when appropriate. Only a limited number of staff members is authorised to access the isolation rooms; they have been trained accordingly. Staff members who have access to isolation rooms are tracked and records are kept. A record of all staff members who have access to isolation rooms is kept so that all staff movements can be tracked. Staff members with access to isolation rooms should be limited to reduce the possibility of transmission among other patients
Moving patients in the facility	<ul style="list-style-type: none"> The movement of patients within the healthcare facility is limited to performing essential procedures A surgical mask is worn by the isolated patient when he/she is moved inside the healthcare facility The best routes for moving patients within the healthcare facility have been established; staff members have been informed All healthcare workers preparing, moving, and receiving patients are aware of the conditions of these patients and have been trained in all relevant procedures, e.g. where to find PPE and how to use it
Visitor access	<ul style="list-style-type: none"> Signs outside the ward inform all visitors about symptoms of acute respiratory infections; if possible, visitors are checked for symptoms before entering the facility Rules are in place for the access of visitors to the facility and to the isolation rooms (e.g. one visitor a time) with suspected or confirmed patients Hand hygiene procedures are explained to the visitors before entering and after leaving the isolation room PPE are available for visitors; procedures for donning and doffing are in place and accessible A trained healthcare worker is available to check the correct donning and doffing of PPE All visitors are informed about self-monitoring for acute respiratory symptoms as described in the guidelines A record of all visitors that entered an isolation room is kept

Environmental cleaning

Element/Process	Items to check
Room cleaning	<ul style="list-style-type: none"> A procedure has been established for the cleaning of the rooms on a regular basis and when required; cleaning after a patient's discharge is also covered by this procedure Appropriate products for the cleaning and disinfection of the surfaces, equipment and medical apparatuses are available PPE for the cleaning personnel are available in different sizes Cleaning personnel have been trained on all relevant procedures, e.g. contact times for the different products, the correct use of PPE (included donning and doffing), and self-

Element/Process	Items to check
	monitoring of symptoms. They are aware of the procedure to follow if they develop symptoms • A record of cleaning staff that have cleaned isolation rooms is maintained

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