

**IP&C for seasonal respiratory infections (including SARS-CoV-2) for UK ambulance services in winter 2021 to 2022**

National Ambulance Service IPC Group

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This document is an appendix to the [infection prevention and control for seasonal respiratory infections in health and care settings (including SARS-CoV-2) for winter 2021 to 2022 guidance](https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control) issued jointly by the Department of Health and Social Care (DHSC), Public Health Wales (PHW), Public Health Agency (PHA) Northern Ireland, NHS National Services Scotland, UK Health Security Agency (UKHSA) and NHS England as official guidance. The guidance is published on their behalf by UKHSA.

This guidance relates to practice required to prevent transmission of seasonal respiratory infections (SRIs) focussing on influenza, SARS-CoV-2 and respiratory syncytial virus (RSV) in ambulance sector settings while continuing to support the recovery of services.

The guidance has been produced by the National Ambulance Services Infection Prevention and Control Group (NASPICG), a national subject matter expert group reporting to ambulance Quality Improvement, Governance and Risk Directors (QIGARD) within the structure of the Association Ambulance Chief Executives (AACE). The guidance has been approved by QIGARD and overseen and signed off by the UK national Infection Prevention and Control (IPC) Cell led by NHSEI.

This guidance is of a general nature and employers should consider the specific conditions of each individual place of work and comply with all applicable legislation and regulations, including the [Health and Safety at Work etc. Act 1974](https://www.legislation.gov.uk/ukpga/1974/37/contents). This guidance does not supersede existing legislation or regulations across the UK.

## Summary

All non-scheduled care patients should be triaged for respiratory infection on assessment or prior to attendance, depending on emergency, using screening questions. A sample screening tool can be found in [Appendix 1](https://www.gov.uk/government/publications/covid-19-guidance-for-ambulance-trusts). The answers to these should be documented on the patient notes/(electronic) patient report form ((E)PRF) and the receiving unit should be informed prior to patient handover.

All non-emergency scheduled care patients using Patient Transport Service (PTS) should (where possible) be screened for respiratory infection on booking as part of the assessment process with confirmation of no changes on the day of transport. An example of booking questions can be seen in [Appendix 1](https://www.gov.uk/government/publications/covid-19-guidance-for-ambulance-trusts). Staff should check with the patient if they have any respiratory infection symptoms before they board the ambulance and inform the hospital if this is the case.

Hospitals should be notified if triage and assessment indicates suspicion of respiratory infection (including SARS-CoV-2) prior to offloading the patient, however this should not delay handover at the hospital.

All patients should be treated as suspected of having a respiratory viral infection unless risk assessment or confirmed diagnosis has excluded this. **As a minimum, all patient contact currently requires level 2 PPE and level 3 to be used where AGPs are performed.**

Physical distancing for non-respiratory pathways should be at least 1 metre with appropriate risk mitigations such as ventilation, fluid resistant surgical masks (FRSM) (Type IIR), increasing whenever feasible to 2 metres in all areas.

Physical distancing is recommended to remain at 2 metres for those receiving unscheduled or emergency care who are allocated to respiratory pathways.

## 1. Main messages

This guidance allows for organisations to assess and manage the ongoing delivery of service provision throughout the winter period 2021 to 2022.

This guidance is intended to prevent transmission of SARS-CoV-2 (including variants of concern) and other SRIs such as influenza and RSV, using local and national prevalence and incidence data during the winter months to guide service delivery locally.

Main changes:

* removal of the 3 distinct COVID-19 care pathways (high, medium and low). This is in response to stakeholder feedback and to facilitate local application of the guidance by organisations/employers. The requirement and use of care pathways should be defined locally
* further suggested criteria to be applied within the ‘hierarchy of controls’ to support organisations and services with maximum workplace risk mitigation
* triaging of patients (via Advanced Medical Priority Dispatch System (AMPDS)/Pathway system) will continue and is widened to include other respiratory pathogens circulating over the winter period such as RSV and influenza
* all patients where status of respiratory infection is unknown will be treated as suspected to have an infection until triage and risk assessment is undertaken
* physical distancing should be at least 1 metre (with appropriate risk mitigations such as ventilation and surgical masks) increasing whenever feasible to 2 metres in all areas including non-clinical settings
* physical distancing is recommended to remain at 2 metres for the respiratory pathway and unscheduled or emergency care and in clinical settings
* the introduction of SRI (including SARS-CoV-2) risk pathway as patients will be triaged into the appropriate care pathway by the receiving facility
* clarification of changes to patient cohorting for PTS aligned to the new SRI pathway
* the defined list of aerosol generating procedures (AGPs) is currently under review, expected to be confirmed by end November 2021

What has not changed:

* universal use of surgical face masks (Type IIR) to remain as an IPC measure within all ambulance sector settings during the winter period 2021 to 2022
* currently all pre-hospital patients should be treated as a suspected or confirmed case of SRI including SARS-CoV-2 unless a risk assessment has deemed them to be in the low risk category, for example scheduled care patients where this has been excluded. **As a minimum, all patient contact currently requires level 2 PPE and level 3 to be used where AGPs are performed.**
* following triage, patients should be placed on either a non-respiratory or respiratory pathway
* patients with symptoms of respiratory infection, or confirmed infection, should be transported separately where possible, however they can be transported within the same vehicle if a minimum of 1 metre distance can be achieved, a surgical mask is worn by patients, and vehicle-based ventilation systems are maintained
* all NHS organisations should ensure reliable application of all IPC recommendations and assurance on adherence, that personal protective equipment (PPE) is available and in supply, and that all staff training in PPE donning and doffing is up to date
* no changes to PPE recommendations for direct patient care or when performing AGPs in an emergency response prior to triage:
	+ Level 2 PPE for direct patient contact, no AGP performed
	+ Level 3 PPE when undertaking AGP
* the use of physical distancing, hand hygiene for staff, patients, individuals and visitors are advised in both clinical and non-clinical areas to mitigate and further reduce the risk of infection and onward transmission. Further information can be found in the [Working Safely for non-clinical areas guidance](https://aace.org.uk/resources/working-safely-during-covid-19-in-ambulance-service-non-clinical-areas/)
* no changes to decontamination requirements
* strengthening of the ‘hierarchy of controls’ as these apply to SRIs, with definitions and supporting materials for implementation. Where an unacceptable risk of transmission remains following the ‘hierarchy of controls’ risk assessment, it may be necessary to consider the extended use of respiratory protective equipment (RPE) for patient care in specific situations. The risk assessment should include evaluation of the ventilation in the area, operational capacity, and prevalence of infection/new variants of concern in the local area.

## 2. Scope and purpose

The COVID-19 pandemic remains a threat and as such there continues to be a need to be cautious in order to prevent and control transmission of the virus. New variants of SARS-CoV-2 remain a risk as do other respiratory infections, specifically influenza and RSV which are likely to present over winter 2021 to 2022.

As COVID-19 control measures are eased across the UK, it is necessary for some control measures to remain within health and care services. Progression in this next (recovery) phase must continue to be underpinned by patient, individual and procedure risk assessment and triaging and testing (if available) prior to treatment for patients and individuals with respiratory infections including COVID-19.

While the triage of patients at the point of call for emergency response will continue to ask certain respiratory questions in relation to primary conditions, these questions may change over time. It is important that triaging for respiratory illness in addition to the chief complaint is still undertaken while in attendance and as part of the medical model.

While this document seeks to ensure a consistent and resilient UK wide approach, some differences in operational details and organisational responsibilities may apply, where current legislation and guidance, for example on clinical definitions, already exists. In some instances there may also be regional variations.

The IPC measures recommended are underpinned by the [National Infection Prevention and Control Manual practice guide](http://www.nipcm.hps.scot.nhs.uk/) and associated literature reviews.

Details on the organisational and employer responsibilities in relation to IPC can be found in the [main UK IPC guidance](https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control).

## 3. Infection prevention and control precautions for seasonal respiratory infections

### **3.1 Universal masking**

Universal masking with face coverings (for the public) or surgical masks (Type IIR, for healthcare staff and patients) to prevent the transmission of SRIs in health and care settings, as a source control measure, should continue to be applied in all ambulance settings.

All patients, including those with confirmed or suspected respiratory infection, should be provided with a surgical mask (Type IIR) to be worn at all times unless they are exempt or this interferes with their clinical care. They should wear a surgical mask to minimise the dispersal of respiratory secretions and to reduce environmental contamination. The surgical mask should be replaced when soiled or damaged. The requirement to wear a surgical mask must never compromise their clinical care, such as when oxygen therapy is required.

Surgical masks (Type IIR) should continue to be worn by staff in all areas (including non-clinical areas) within ambulance sector settings.

### **3.2 Patient placement/assessment for infection risk**

#### **3.2.1 Triaging and testing**

Triaging within all ambulance services must be undertaken to enable early recognition of potentially infectious (including asymptomatic) patients, however this should not cause any delay at hospital handover.

Patients requiring urgent or emergency care must be promptly assessed for the risk of an SRI by clinical staff on initial assessment at scene. They should record the outcome in the patient records. Triage should be undertaken by clinical staff who are competent on initial assessment at scene using the appropriate triage tool. See [Appendix 1](https://www.gov.uk/government/publications/covid-19-guidance-for-ambulance-trusts) for an example of triage / assessment questions.

The receiving hospital should be informed on arrival prior to handover whether or not the patient has symptoms and signs of a respiratory infection.

Patients requiring scheduled care or PTS should be assessed prior to transport as part of the booking process. This should be undertaken using an agreed assessment tool. See [Appendix 1](https://www.gov.uk/government/publications/covid-19-guidance-for-ambulance-trusts) for an example of assessment questions. Information should be passed onto the receiving department. PTS staff should continue to wear [Level 2 PPE](https://www.gov.uk/government/publications/covid-19-guidance-for-ambulance-trusts/covid-19-guidance-for-ambulance-trusts#PPElevels).

#### **3.2.2 Patient placement**

#### Emergency Response

In the pre-hospital setting where the patient’s infectious status is unknown, patients should be transported individually and respiratory triage should be carried out.

On arrival at hospital or receiving unit the staff should be informed of the outcome of the respiratory risk assessment. They will then advise on the most suitable placement of the patient.

Escorts should not accompany the patient unless they are essential (for example carers, parents or guardians) and they should be advised not to travel if they have respiratory symptoms.

#### **Non-Emergency Scheduled Care (PTS)**

Patients on the non-respiratory pathway in scheduled care (PTS) can be transported together if a minimum 1 metre distance can be achieved, they are able to wear a surgical face mask (Type IIR) and vehicle-based ventilation systems are utilised. They must not be transported with patients with suspected or confirmed respiratory infection.

Patients with symptoms of respiratory infection, in scheduled care (PTS) should be transported separately where possible. They may be transported within the same vehicle to maintain service delivery, if a minimum of 1 metre distance can be achieved, surgical masks (Type IIR) worn and vehicle-based ventilation systems are utilised.

Patients in scheduled care (PTS) with confirmed respiratory infection should be transported separately where possible. They may be transported as a cohort with patients with the same confirmed respiratory infection if a minimum of 1 metre distance can be achieved, surgical masks (Type IIR) worn and vehicle-based ventilation systems are utilised.

## 4. Personal protective equipment – standard precautions

For the purpose of this document, the term ‘personal protective equipment’ is used to describe products that are either PPE or medical devices that are approved by the Health and Safety Executive (HSE) and the Medicines and Healthcare products Regulatory Agency (MHRA) as protective solutions in managing the SARS-CoV-2 pandemic.

This guidance is for clinical care environments and is intended for use when in direct contact with patients, or patient care areas. There is further [guidance specific to the ambulance sector available for ambulance service non-clinical areas](https://aace.org.uk/resources/working-safely-during-covid-19-in-ambulance-service-non-clinical-areas/), which must be followed in non-clinical areas for example wearing surgical masks in vehicle cabs.

Local or [national uniform policies](https://www.england.nhs.uk/about/equality/equality-hub/uniforms-and-workwear/) must be considered when wearing PPE.

Before undertaking any procedure, staff should assess any likely exposure and ensure PPE is worn that provides adequate protection against the risks associated with the procedure or task being undertaken.

The required level of PPE to be used **as a minimum for the care of all patient’s** contacts including possible or confirmed COVID-19 cases is:



**All PPE should be:**

* compliant with the relevant BS/EN standards (technical standards as adopted in the UK)
* located close to the point of use (where this does not compromise patient safety, for example mental health/learning disabilities)
* used appropriately in the ‘hierarchy of controls’ with all other mitigations taken int account
* donned after hand hygiene procedures have taken place (hand washing or use of alcohol gel)
* stored safely and in a clean, dry area to prevent contamination
* within expiry date (or had the quality assurance checks prior to releasing stock outside this date)
* single use unless specified by the manufacturer or as agreed for extended/ sessional use including surgical facemasks
* changed immediately after each patient and/or after completing a procedure or task
* disposed into the correct waste stream depending on setting, such as domestic waste/offensive (non-infectious) or infectious clinical waste
* discarded if damaged or contaminated
* safely doffed (removed) to avoid self-contamination. [Guidance on donning (putting on) and doffing (removing) PPE is available](https://aace.org.uk/resources/resource-category/infection-prevention-control/)
* reusable PPE such as non-disposable goggles, face shields or visors should be decontaminated after each use following manufacturer’s or agreed local guidance
* all PPE that has been used during the care of a patient must not be worn within the cab of the vehicles including Rapid Response Vehicles (RRVs) with exception of an FRSM (Type IIR)
* all PPE must be changed on the completion of the care episode and must be removed before entering the cab of the vehicle and replaced with a new mask prior to entering the non-clinical area of the vehicle (cab)

Any reusable PPE (such as filters/RPE) must have a maintenance and decontamination process in place and responsibility assigned.

### **4.1 Disposable gloves**

**Disposable gloves must:**

* be worn when treating all patients at Level 2 and 3, or when exposure to blood and/or other body fluids, non-intact skin or mucous membranes is anticipated, suspected or confirmed infection in Level 1
* be changed immediately after each patient and/or after completing a procedure/task even on the same patient. Remember the importance of performing hand hygiene before donning and after doffing and regularly throughout patient care
* be put on immediately before performing an invasive procedure and removed on completion
* never be decontaminated with alcohol based hand rub (ABHR) or soap between use

Double gloving is not required or recommended for routine clinical care of any patient with an SRI including SARS-CoV-2 (either suspected or confirmed).

Inappropriate use of gloves, that is not changing them as recommended above, risks the gloves contributing to the transfer of organisms and cross-infection.

Gloves are not required when undertaking administrative tasks for example using the telephone, using a computer or tablet, writing in the patient notes. Hand hygiene should be performed before and after undertaking administrative tasks.

### **4.2 Disposable aprons and gowns/coveralls**

Disposable plastic aprons must be worn to protect staff uniform or clothes from contamination when providing direct patient care and during environmental and equipment decontamination.

**Aprons must be:**

* worn to protect uniform or clothes when contamination is anticipated or likely and when exposure to blood and/or other body fluids is likely
* worn when exposure to non-intact skin or mucous membranes is anticipated or there is likely or suspected or confirmed infection
* worn when providing direct patient care
* changed between patients and/or after completing a procedure or task
* disposable aprons and gowns must be changed between patients and immediately after completion of a procedure/task
* level 2 is the minimum PPE that should be worn. It is acknowledged in an extreme/hazardous situation or event that this may change following a dynamic risk assessment

Remember the importance of performing hand hygiene before donning and after doffing and regularly throughout patient care.

**Fluid repellent coveralls or full body gowns must be:**

* worn when there is a risk of extensive splashing of blood and/or body fluids
* worn when undertaking AGPs on patients on the respiratory pathway
* worn when a disposable apron provides inadequate cover for the procedure or task being performed (extensive trauma)
* changed on the completion of the care episode and must be removed before entering the cab of the vehicle
* worn when deemed necessary following risk assessment

### **4.3 Eye and face protection**

**Eye or face protection (including full-face visors) must:**

* be worn if blood and/or body fluid contamination to the eyes or face is anticipated or likely for example and always during AGPs
* be worn when deemed necessary following risk assessment\*
* not be impeded by accessories such as piercings or false eyelashes
* not be touched when being worn
* if reusable must have a decontamination schedule in place

Regular corrective spectacles are not considered as eye protection. Remember the importance of performing hand hygiene before donning and after doffing and regularly throughout patient care.

\*Risk assess eye/face protection:

* if the patient has a suspected or confirmed SRI including SARS-CoV-2 then eye/face protection must be worn for all care
* if the patient does not have a suspected or confirmed SRI including SARS-CoV-2 following a patient assessment, risk assess whether eye/face protection is required for the care procedure/task where there is an anticipated risk of blood/body fluids spraying/splashes

### **4.4 Fluid resistant surgical masks (Type IIR)**

**Surgical masks must:**

* be well-fitting and fit for purpose and fully cover the mouth and nose. Manufacturer’s instructions must be followed to ensure effective fit and protection
* be worn when within 2 metres of any patient
* be replaced if damaged, visibly soiled, damp, uncomfortable or difficult to breathe through
* be worn when 2 crew members are in the front of any vehicle (as per the Ambulance [Working Safely Guidance](https://aace.org.uk/wp-content/uploads/2021/02/AACE-COVID-19-SAFE-WORKING-V5.0-F-DC.pdf) in non-clinical guidance)
* not be allowed to dangle around the neck at any time
* not be touched once put on
* be worn once and then discarded in the appropriate waste stream healthcare (clinical) waste when frontline and in domestic waste in non-clinical settings. Hand hygiene must always be performed after disposal

Remember the importance of performing hand hygiene before donning and after doffing and regularly throughout patient care.

Information about hand hygiene, respiratory/cough etiquette, safe management of the care environment, waste and safe management of linen can be found in the [main UK IPC guidance](https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control).

### **4.5 Headwear and footwear**

**Head/footwear:**

* headwear is not routinely required in clinical areas (even if undertaking an AGP)
* headwear worn for religious reasons (for example turban, kippot veil, headscarf) is permitted provided patient safety is not compromised. These must be washed and/or changed between each shift or immediately if contaminated and should comply with local and [national uniform policies](https://www.england.nhs.uk/about/equality/equality-hub/uniforms-and-workwear/)
* foot/shoe coverings are not required or recommended for the care of SRI including SARS-CoV-2 cases

## 5. Transmission based precautions for the respiratory pathway

This section describes specific actions that should be taken when applying transmission-based precautions (TBPs) in the care of a person known or suspected to have a respiratory infection (the respiratory pathway). TBPs are applied when standard infection control precautions (SICPs) alone are insufficient to prevent cross-transmission of an infectious agent. Further information on this can be found in the main guidance.

### **5.1 Personal protective equipment when applying TBPs**

#### Surgical facemasks

FRSM (Type IIR) should always be provided for all patients with suspected or confirmed respiratory infection or where infectious status is unknown. Unless exempt or not tolerated a surgical mask should be worn throughout the patient’s journey, where appropriate.

A FRSM (Type IIR) must be worn by staff when caring for patients with a confirmed or suspected infection ([refer to main UK IPC guidance](https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control)).

### **5.2 Respiratory protective equipment when applying TBPs**

RPE is used to prevent inhalation of small airborne particles arising from AGPs.

All staff who are required to wear a filtering face piece (FFP3) respirator must be fit tested for the relevant model, or a manufacturer recommended direct equivalent model, to ensure an adequate seal or fit. Fit checking is necessary when a respirator is put on (donned) to ensure an adequate seal has been achieved. Where fit testing fails, suitable alternative equipment must be provided. Reusable respirators can be utilised by individuals if they comply with HSE recommendations – reusable respirators should be decontaminated according to the manufacturer’s instructions.

**Respiratory protective equipment must:**

* be well fitting, covering both nose and mouth
* always be worn when undertaking an AGP on all patients
* not be allowed to dangle around the neck of the wearer at any time
* not be touched once put on
* be removed outside the patient area.
* non-reusable FFP3 should be single use (disposable) and fluid resistant
* valved respirators are not fully fluid resistant unless they are also ‘shrouded’. Valved non-shrouded FFP3 respirators should be worn with a full-face shield
* where fit testing fails, suitable alternative equipment must be provided, or the healthcare worker moved to an area where FFP3 respirators are not required
* respirators should be compatible with other facial protection used (protective eyewear) so that this does not interfere with the seal of the respiratory protection
* the respirator should be discarded and replaced and not be subject to continued use if the facial seal is compromised, it is uncomfortable, or difficult to breathe through
* reusable respirators/FFP3 can be utilised by individuals if they comply with HSE recommendations. Reusable respirators should be decontaminated according to the manufacturer’s instructions or locally agreed guidance
* if an FFP3 mask is removed at any time it must be disposed of and not reused
* powered respirator hoods can be utilised in place of FFP3 face masks, and do not require FIT testing. However, staff are required to be trained in their safe use and the correct tests/checks must be carried out prior to use. Refer to local guidance for the procedures, confidence/safety checks, decontamination and maintenance guidance required for the specific units

[Evidence on RPE is available](https://hpspubsrepo.blob.core.windows.net/hps-website/nss/1722/documents/1_tbp-lr-rpe-v3.1.pdf).

Further information regarding fitting and fit checking of respirators can be found on the [Health and Safety Executive website](https://www.hse.gov.uk/coronavirus/ppe-face-masks/face-mask-ppe-rpe.htm).

Respirators with exhalation valves are not fluid-resistant unless they are also ‘shrouded’. Valved non-shrouded respirators should be worn with a full-face shield.

The importance of performing hand hygiene before donning and after doffing and regularly throughout patient care must be remembered at all times.

## 6. Ambulance Service PPE Levels

The appropriate level of PPE should be worn following a dynamic risk assessment of the presenting risks including the respiratory risk assessment.

Use of PPE as described below should not detract from the usual IPC risk assessments that staff carry out routinely to underpin all clinical practice and decision making. Staff must also ensure the correct level of PPE is worn dependent on the patient presentation and the clinical activities that are required during patient care.

The PPE for SRIs including SARS-CoV-2 in the ambulance sector is categorised by level.

### Standard infection control precautions

SICPs should be used as a minimum for all patient contacts; however it is advised that the minimum Level 2 should be used by ambulance trusts for emergency response and scheduled care during the winter period due to the increasing risk of SRIs and the unknown infectious state of the patient.**Level 2**

**Level 2 PPE comprises:**

* disposable gloves
* disposable apron
* FRSM (Type IIR)
* eye protection/face shield should be worn routinely for all suspected or confirmed SRIs
* if a risk assessment has been undertaken which safely informs the attending staff that the patient is unlikely to have a respiratory infection and there is no risk of splash injury, eye protection is not required

### **Level 3**

**Level 3 PPE comprises:**

* disposable gloves
* fluid repellent coveralls/long sleeved apron/gown
* FFP3 or powered respirator hood
* eye protection/ face shield (not required with a powered respirator)

Care should be taken to ensure that PPE is donned and doffed correctly to avoid inadvertent contamination. [Donning and doffing guidance is available](https://aace.org.uk/resources/resource-category/infection-prevention-control/).

## 7. Aerosol generating procedures

An AGP is a medical procedure that can result in the release of airborne particles (aerosols) from the respiratory tract when treating someone who is suspected or known to be suffering from an infectious agent transmitted wholly or partly by the airborne or droplet route.

The following is a list of ambulance specific medical procedures for SRIs that have been reported to be aerosol generating and are associated with an increased risk of respiratory transmission:

* tracheal intubation and extubation
* manual ventilation
* tracheotomy or tracheostomy procedures (insertion or removal)
* non-invasive ventilation (NIV); bi-level positive airway pressure ventilation (BiPAP) and continuous positive airway pressure ventilation (CPAP)
* high flow nasal oxygen (HFNO)
* high frequency oscillatory ventilation (HFOV)
* induction of sputum using nebulised saline
* respiratory tract suctioning
* upper ENT airway procedures that involve respiratory suctioning

The following are not considered as an AGP:

* chest compressions
* defibrillation
* medication administration via nebulisation e.g. nebulised salbutamol
* oral/pharyngeal suctioning
* insertion of basic airway adjuncts, for example nasopharyngeal/oropharyngeal airways

Further information on AGPs can be found in the [main UK IPC guidance](https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control).

Further information on AGPs for neonates and a literature review for AGPs are [available](https://hps.scot.nhs.uk/web-resources-container/sbar-assessing-the-evidence-base-for-medical-procedures-which-create-a-higher-risk-of-respiratory-infection-transmission-from-patient-to-healthcare-worker/).

## 8. Hierarchy of controls

Limiting transmission of infections in health and other care setting requires a range of IPC measures. Included is the ‘hierarchy of controls’ which if applied in order are used to identify the appropriate controls. Safe systems of work outlined in the ‘hierarchy of controls’ including elimination, substitution, engineering, administrative controls and PPE/RPE are an integral part of IPC measures.

Organisations/employers have a responsibility to undertake risk assessments in the context of managing infectious agents. Key areas and measures for assessment are outlined in the [main UK IPC guidance](https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control).

## 9. Clinical application of the guidance in the out of hospital setting

The recommended advice for possible SRIs including SARS-CoV-2 patients with mild symptoms is for them to stay at home until they are well and symptom free. Refer to [stay at home advice](https://www.gov.uk/government/publications/covid-19-stay-at-home-guidance) for more information.

The use of surgical facemasks (Type IIR) within healthcare across the UK remains as an IPC measure including the extended use of Type IIR facemasks by all staff in clinical settings. It continues to be good practice to wear surgical masks in low risk non-clinical settings.

In addition to physical distancing, hand hygiene for staff, patients, individuals and visitors is advised in both clinical and non-clinical areas to further reduce the risk of transmission.

Patients in all care areas should be encouraged and supported to wear a Type IIR facemask, providing it is not detrimental to their medical or care needs or they are medically exempt. This will help to minimise the dispersal of respiratory secretions and reduce environmental contamination.

Staff must perform a dynamic risk assessment which should be based on information provided prior to arrival at scene as well as any additional information gained on arrival and the application of the hierarchy of controls.

The correct level of PPE must be worn by all staff who have direct contact with a possible or confirmed SRI patient and are within 2 metres of the patient.

While providing care to patients with respiratory symptoms (suspected or confirmed respiratory infection) PPE for droplet precautions as described below in Table 1 must be applied.

If the patient has a confirmed infection with a known pathogen that spreads by the airborne route, PPE for airborne precautions as described in Table 1 must be applied.



\*Type IIR can be worn sessionally if providing care for patients with SRI including SARS-CoV-2 cohorted patients.

Where an unacceptable risk of transmission remains following the ‘hierarchy of controls’ risk assessment, it may be necessary to consider the extended use of RPE for patient care in specific situations. The risk assessment should include evaluation of the ventilation in the area, operational capacity, and prevalence of infection/new variants of concern in the local area.

### **9.1 Maintaining physical distancing and patient placement**

It is essential that healthcare workers continue to undertake a dynamic risk assessment before delivering direct patient care. On arrival with the patient, it remains prudent to maintain a safe physical distance while the patient’s respiratory history is assessed which will determine the use of appropriate PPE.

All staff and other care workers must maintain physical distancing of at least 1 metre (with appropriate risk mitigations such as ventilation and surgical mask), increasing whenever feasible to 2 metres in all areas. Physical distancing is recommended to remain at 2 metres for those receiving unscheduled or emergency care who are allocated to respiratory pathways.

For every 1 metre away from the source of infection, the relative risk of transmission decreases. While physical distances of more than 1 metre are associated with decreased viral transmission, there is limited evidence that a 2 metre distance is where the risk of droplet/short-range airborne transmission decreases to an acceptable level. Therefore, physical distancing is recommended to remain at 2 metres where infectious respiratory patients are cared for.

For planned care, such as PTS, if a distance of more than 1 metre can be maintained between patients in larger vehicles, patients may be transported together as per local risk assessment, established through booking questions. See the section on [patient placement and assessment for infection risk](https://www.gov.uk/government/publications/covid-19-guidance-for-ambulance-trusts/covid-19-guidance-for-ambulance-trusts#threetwo).

Patients with no respiratory symptoms (standard pathway) should not be cohorted with patients with a confirmed SRI including those who are SARS-CoV-2 positive.

Surgical masks (Type IIR) must be worn by all patients unless it is detrimental to their medical or care needs or they are medically exempt.

Those who are unable to wear surgical masks and are medically exempt should be transported individually.

### **9.2 Considerations for cardiac arrests**

The majority of patients with an SRI including SARS-CoV-2 will have mild symptoms, and it is estimated about 4% to 5% may be critically ill.

If a patient experiences a witnessed cardiac arrest in front of ambulance responders, commence compression-only resuscitation using Level 2 PPE. If there is more than one responder on-scene, those trained in Level 3 PPE should move away at least 2 metres from the patient and don Level 3 PPE before providing advanced life support assistance.

Commence resuscitation where this is indicated by local clinical guidance. Minimise the delay in undertaking time-critical interventions. It is acceptable for the first person to enter the scene wearing Level 2 PPE. Where trained and equipped to use Level 3 PPE, this may be used initially where it will not cause a delay in commencing defibrillation and/ or chest compressions.

Key considerations:

* commence chest compressions, attach the defibrillator and defibrillate if indicated. None of these tasks are considered AGPs and can be undertaken in Level 2 PPE
* do not place your face near the patient to assess breathing
* basic airway management can be carried out in Level 2 PPE such as nasopharyngeal (NPA) or oropharyngeal airway (OPA), as these are not classed as AGPs
* do not progress to airway ventilation until you have donned Level 3 PPE
* all AGP interventions require Level 3 PPE
* where available, place a surgical mask or oxygen mask on the patient’s face
* if required and not already available on-scene, request back up from a Level 3 PPE trained response
* if resuscitation is not commenced, or is terminated before the arrival of other resources, provide an early SITREP to reduce the number of responders who need to enter the scene

### **9.3 Care of the deceased**

The principles of SICPs and TBPs continue to apply when caring for the deceased. This is due to the ongoing risk of infectious transmission via contact, although the risk is usually lower than for living patients. The [usual principles of SICPs and TBPs apply](https://www.gov.uk/government/publications/covid-19-guidance-for-care-of-the-deceased) for the deceased where there is possible or confirmed SRI including SARS-CoV-2.

As a minimum, the PPE required for handling the deceased with possible or confirmed SRI including SARS-CoV-2 is Level 2 PPE.

## 10. Conveyance and patient handover

### **10.1 Clinical triage and assessment**

While staff undertake their normal clinical assessment of the patient, further consideration should be undertaken in relation to SRIs including SARS-CoV-2. While pre-hospital testing has not yet been introduced routinely, it is important that patients should be assessed to ascertain the risk of them having a respiratory infection which may be in addition to their presenting condition.

Patients should be triaged prior to admission to healthcare settings and the receiving unit should be informed of the result on handover.

The additional [respiratory triage questions](https://www.gov.uk/government/publications/covid-19-guidance-for-ambulance-trusts) will help assess the likelihood of the patient having a respiratory infection and should be considered in all cases.

Where the triage questions have been undertaken they should be documented on the patient report form and this information passed to the receiving unit on arrival (local arrangements will apply for recording and reporting).

It is important to follow the local guidance specific to the trust/area. This may require contact with the receiving unit prior to departure or on arrival to have a discussion regarding where to take the patient as this may not be the usual area within the hospital. This should not cause any delay to the patient handover. All cases should be risk assessed by an appropriate trained person and documented.

Confirmed cases with a positive result for SARS-CoV-2, influenza or RSV can be transported in the same vehicle if they have the same infection and are wearing surgical masks. Confirmed cases where patients have different infections should not travel together. It remains good practice for this patient group to maintain a social distance of 1 metre plus risk mitigation between each patient.

Possible cases (symptomatic or suspected) should wear surgical masks. If a distance of over 1 metre can be maintained between patients they can be transported together. The required distance may equate to one empty seat between patients in the same row, and one empty row between rows of patients, but needs to be measured.

Asymptomatic patients who have not had any respiratory symptoms for the past 10 days may be conveyed in the same vehicle provided they wear surgical masks and must sit over 1 metre apart.

There is no requirement for ambulance clinicians to change or upgrade their PPE for the purposes of entering the emergency department, or the receiving unit, to conduct patient handover. While in the healthcare setting all staff must wear a surgical face mask at all times.

### **10.2 Using the most appropriate conveying resource**

Suspected or confirmed SRI including SARS-CoV-2 cases must not be conveyed by rapid response vehicle, ambulance car services or third party taxis.

For vehicles where there is no closed bulkhead:

* all occupants of the vehicle that are not protected by a bulkhead are required to wear a surgical mask
* reinforce the requirement for patients to wear a surgical mask, providing it does not compromise their clinical care, such as when receiving oxygen therapy

The following guidance applies whenever a patient is conveyed:

* avoid opening cupboards and compartments unless essential, if equipment is likely to be required then remove from the cupboard prior to loading patient
* air conditioning or ventilation must be set to extract and not recirculate the air within the vehicle where possible
* essential escorts/carers/support workers should not be restricted from travelling with the patient where their support is necessary for the benefit of the patient (for example disabled patients)
* non-essential persons (such as observers, family members) are not to travel within the patient compartment with a suspected or confirmed case, unless the patient is a child who requires conveyance. In this case it is acceptable for a parent or guardian to accompany the child, however the parent/guardian must wear a surgical facemask (unless exempt)
* family members and relatives of these patients accompanying these patients may be restricted depending on the identified risk pathway for the patient. All visitors/patient escorts will be required to wear a facemask within the ambulance and should remain in the vehicle saloon

### **10.3 Use of aviation for transfer of SRI including SARS-CoV-2 patients**

There are circumstances where it is appropriate for suspected and confirmed seasonal respiratory infection patients to be flown, for example during transfer by air ambulance. Organisations responsible for these operations should evaluate options and take measures to minimise risk of transmission from contact, droplet and airborne routes to attending medical staff and to aircrew.

On occasions, AGPs will be necessary during the airborne transfer of suspected and confirmed SRI including SARS-CoV-2 patients (for example, in emergency airway suction). Despite measures being taken to avoid AGPs being routinely delivered on the aircraft, planning must be made for this eventuality, including consideration of donning the appropriate level of PPE prior to take-off.

Organisations must consider whether the cockpit can be isolated from the medical cabin sufficiently to prevent contact, droplet and airborne transmission, for example using an ‘air-tight’ bulkhead seal and separating cabin and cockpit ventilation systems. Where this can be achieved, the aircraft may be considered in a similar way to a land ambulance with a closed bulkhead between attending medical personnel and ambulance driver. In such circumstances, the same advice in terms of PPE and subsequent disinfection should be followed.

If the cockpit and medical cabin cannot be separated, organisations must consider whether other measures to avoid transmission are feasible. This includes contact and droplet avoidance, maintaining a distance from pilot(s) to the patient of more than 1 metre or appropriate PPE against these modes of transmission (which may or may not be practical). For the avoidance of airborne transmission, fit-tested FFP3 would need to be donned before any AGP. As donning PPE quickly in flight may be impossible for pilots, they may have to wear FFP3 throughout a patient transfer flight. Trials have shown this is feasible but individual organisations may have to determine if these measures are operationally acceptable.

Some organisations may consider the use of ‘isolation pods’ with appropriate air filtration where cabin separation is not possible. Careful assessment must be made to the practicality of emergency management of patients in such pods and whether an AGP can be delivered safely without breaking the seal of the device. If not, other precautions must be in place as above.

Following the carriage of a suspected or confirmed SRI including SARS-CoV-2 patient, it is recommended that both aircraft cabin and equipment are decontaminated. This should be done with disinfectants approved for use on the aircraft type and equipment concerned.

### **10.4 Hospital handover**

In the event of a delay in handing over the patient at the receiving facility, clinicians must follow the local processes in place with regards to arrival notification and escalation. Where, under exceptional circumstances, it is necessary for the patient to remain in the ambulance while awaiting hospital handover, then the below IPC precautions and the ‘hierarchy of controls’ should be considered as good practice and adopted where reasonably practical:

* ensure that the patient and any essential escorts wear surgical facemasks (Type IIR) throughout, providing it does not compromise their clinical care, such as when receiving oxygen therapy. Minimise the number of individuals within the patient compartment. Allow only essential escorts and the minimum number of clinicians in the patient compartment to provide a safe level of care to the patient
* consider patient positioning and where practical/possible avoid sitting face to face (for example staff who are not performing direct care should sit at the foot end of the patient)
* crews should complete the respiratory assessment at scene or at least prior to arrival and inform the receiving unit of the outcome. This should be documented in the patient’s notes
* maintain ventilation systems operating (set on extract where possible); this may require the vehicle to remain running or started periodically to allow the ventilation system to operate. This will help to dilute the level of virus particles and maintain air circulation within the patient compartment. The minimum number of air changes within an ambulance is 20 air changes per hour which all European committee standard (CEN) vehicles are compliant with, however most ambulances vehicles have 40 to 60 air changes per hour
* where more than one clinician is available, the clinician providing care to the patient should be rotated regularly, where possible. This rotation of clinicians will prevent prolonged exposure time and allow individuals the opportunity to safely change PPE and rehydrate, while ensuring safe care for the patient
* surgical masks (Type IIR) worn by staff should be changed regularly – at least every 2 to 3 hours and/or when on a break – and whenever they become damp or soiled
* decontaminate contact surfaces more frequently, where practical this should be carried out during the delay to reduce the environmental contamination levels

There is no requirement to increase the level of PPE worn by clinicians unless the level of care/clinical interventions indicate that a different level of PPE is required. This must be based upon the individual’s dynamic risk assessment, with consideration of all of the hierarchy of controls, transmission route and PPE guidance. Further information can be found in the [main UK IPC guidance](https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control/covid-19-guidance-for-maintaining-services-within-health-and-care-settings-infection-prevention-and-control-recommendations#HOC). There is no evidence that increasing the level of PPE in non-AGP scenarios provides any additional protection.

## 11. Waste disposal

All linen must be managed as per local policy for the management of infectious linen at the receiving unit.

All waste must be segregated and disposed as per local procedure following the guidance within [HTM07:01 Safe management of Healthcare waste](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/167976/HTM_07-01_Final.pdf). Waste generated during the care of patients with confirmed or suspected SRIs including SARS-CoV-2 must be disposed of as category B clinical waste, as per local policy, at the receiving unit.

The crew should remove PPE in the designated area identified within the receiving unit.

## 12. Decontamination

The frequency of cleaning of both the working environment and equipment in care (patient) areas should be increased. In vehicles, frequently touched points, patient surroundings and re-useable equipment that has been exposed to patients and/or clinician should be decontaminated following each patient care episode as a minimum.

The post-patient decontamination should also include frequently touched sites within the cab of the vehicle.

Decontamination of reusable patient care equipment and the care environment must be performed using either:

* a combined detergent/disinfectant solution at a dilution of 1,000 parts per million available chlorine (ppm av.cl.)
* a general purpose neutral detergent in a solution of warm water followed by a disinfectant solution of 1,000ppm av.cl.
* an alternative combined detergent/disinfectant wipe which is effective against enveloped viruses

Alternative cleaning agents/disinfectant products may be used with agreement of the local IPC team. Manufacturer’s guidance/instructions and recommended product contact time must be followed for all cleaning/disinfectant solutions/products.

If an alternative disinfectant is used within the organisation the local IPC team should be consulted on this to ensure that this is effective against enveloped viruses.

Where equipment is used on-scene for assessing/treating patients who are not subsequently conveyed the equipment can be decontaminated using universal sanitising wipes or equivalent approved disinfectant as per manufacturer’s guidance/instruction and recommended product contact time must be followed for all cleaning/disinfectant solutions/products.

### **12.1 All patient conveying vehicles**

Vehicles must be cleaned after each patient transfer, ensuring thorough decontamination of all exposed surfaces, equipment and contact areas before it is returned to normal operational duties, with locally approved cleaning products.

Appropriate PPE must be worn to decontaminate the vehicle – as a minimum, this should include apron and gloves.

Any exposed equipment (that is not within closed compartments) including a stretcher on the vehicle will require decontamination with a combined detergent/disinfectant wipe or equivalent, as per the standard between patient clean.

All contact surfaces (cupboards, walls, ledges), working from top to bottom in a systematic process, will require decontamination. Pay special attention to all touch points.

The vehicle floor should be decontaminated with a detergent solution. This should be at a minimum of the end of every shift and more frequently where facilities exist. Where possible, hospitals should support this practice by working with ambulance colleagues to identify access to appropriate sluice facilities and designated mop and bucket storage for ambulance use.

### **12.2 Any vehicle when AGPs have been performed**

Clearance of infectious particles after an AGP is dependent on the ventilation and air change within the vehicle. The vehicle will require an enhanced decontamination of all exposed surfaces, equipment and contact areas before it is returned to normal operational duties, with a chlorine-based product (or locally approved IPC team equivalent). Cleaning can commence 10 minutes (droplet settling time) after the AGP is complete.

Appropriate PPE must be worn to decontaminate the vehicle – as a minimum, this should include apron and gloves (follow COSHH guidance for protective equipment when using chlorine).

Working from top to bottom in a systematic process, all exposed surfaces and any exposed equipment (that is not within closed compartments) on the vehicle will require decontamination with the locally approved disinfectant. Pay special attention to all touch points.

Ensure that the stretcher is fully decontaminated, including the underneath and the base.

The vehicle floor should be decontaminated with a detergent solution followed by a chlorine-based solution at 1,000 parts per million (or approved equivalent), this should be facilitated by the receiving department. Where possible hospitals should support this practice by working with ambulance colleagues to identify access to appropriate sluice facilities and designated mop and bucket storage for ambulance use.

## 13. Occupational health and vaccination

Further information on occupational health and staff vaccination can be found in the [main UK IPC guidance](https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control).

## 14. Associated legislation

Please note that this guidance is of a general nature and that an employer should consider the specific conditions of each individual place of work and comply with all applicable legislation, including the [Health and Safety at Work etc. Act 1974](http://www.legislation.gov.uk/ukpga/1974/37/contents).

1. Where ventilation systems cannot be separated entirely, it may be sufficient to demonstrate a positive air pressure gradient/flow from cockpit to medical cabin (assuming air intake to the cockpit is from a ‘clean’ source, for example externally derived).
2. Number of Air Changes per Hour as defined in WHO guidance (already referenced in the [main UK IPC guidance](https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control)).
3. Unpublished technical data for one specific air ambulance type currently in use in the UK shows that in forward flight, 5 ‘air exchanges’ can occur in 126 seconds (this depends on several factors that are aircraft and flight condition specific).

**Appendix 1:**

**Sample screening tool for respiratory infections for use in ambulance sector settings (winter 2021 to 2022)**

Screening should be carried out prior to arrival at hospital where possible.

Assessment should be undertaken on booking for PTS where possible.

Where any questions receive a ‘yes’ answer this information should be passed on to the receiving unit at handover.

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