

Reducing infection risk in healthcare settings

Executive summary

With COVID-19 continuing to circulate in the community, the need to maintain ongoing non-COVID care and look after the unprecedented number of patients who are now on NHS waiting lists across the UK, reducing the risk of infection in healthcare settings will continue to be of vital importance. Getting this right will protect patients and staff, not only from COVID-19, but also from other established and emerging pathogens that can spread rapidly in healthcare settings.

This report sets out a number of measures that need to be taken by employers and government to reduce the risk of infection. These include:

- Adequate workplace and individual staff risk assessments
- Providing staff facilities that support infection control
- A greater focus on ventilation in healthcare environments
- The provision of safe and sufficient PPE
- Reporting and investigation of COVID-19 cases suspected to have arisen from work

The BMA has consistently emphasised the importance of providing healthcare workers, as well as the patients they look after, with adequate protection against COVID-19 infection within healthcare settings. It is important that there is a continued focus on implementing measures that can effectively protect healthcare workers and the patients they look after from SARS-CoV-2, and that risk assessments, recommendations and guidance are continually revised as the evidence base evolves. This approach will not only guard against infection and associated personal harm and potential negative impacts on the wider healthcare system during the current pandemic, it will also help to prepare NHS staff and estates to respond effectively to future outbreaks of established and emerging pathogens that can spread rapidly in healthcare settings.



Maintaining high rates of vaccination among staff will be critical to limiting the spread of COVID-19 in healthcare settings. We are pleased that, to date, vaccine uptake amongst NHS staff has been high. While our understanding of the impact of vaccines on transmission of COVID-19 is continually developing, it remains vital that robust infection control measures continue to be taken to protect healthcare workers and their patients from infection.

Below we set out actions for healthcare providers across a range of areas that are required to help reduce the risk of infection for staff and their patients within these environments. Some of these actions may not be possible or appropriate in certain healthcare settings, but all providers should have regard to the infection control principles that underpin them. BMA guidance on COVID-19 for individuals is available [here](#).

The legal obligation on employers to undertake risk assessments

The latest updates to the [UK Infection Prevention and Control \(IPC\) guidance](#) re-assert the need for all individual NHS organisations to assess risk and put in place mitigations prioritised according to the [hierarchy of controls](#), including the provision of respiratory protection where necessary. This is in line with employers' longstanding obligation to undertake suitable and sufficient risk assessments for staff under various regulations which followed the 1974 Health and Safety at Work Act including The Control of Substances Hazardous to Health Regulations¹ and the Management of Health and Safety at Work Regulations 1999².

Assessing employees' risk in an ongoing process; Employers are required to update this assessment in writing when there is evidence of a significant new risk or change in risk. They must act on the updated risk assessment by law with measures taken proportionate to the health risk, including measures to control exposure. Simply following guidance (for example Public Health England's [guidance on infection prevention and control](#)) does not satisfy this legal obligation. The law requires that risk assessments are updated when there is evidence of a significant new risk or change in risk and the effort invested must be proportionate to the risk. It also requires for exposure to be controlled by measures that are proportionate to the health risk.

Healthcare providers should take note that the HSE (Health and Safety Executive) has already taken limited enforcement action with respect to COVID-19 against an ambulance trust as well as other employers.¹ Moreover, workers (or their bereaved relatives) who consider themselves to have acquired COVID-19 as a consequence of their work may well pursue civil claims against employers. Non-compliance by employers with the statutory obligation to undertake suitable and sufficient risk assessments are likely to be an important feature of such cases.

In assessing, and taking steps to reduce, the risks to the health (and safety) of staff the employer should follow a sequence often referred to as the 'hierarchy of control'. Thus, in the assessment of the risks of COVID-19 one should consider the sources of infection, then the pathway(s) and then the workers at the receiving end of the exposure. This is a useful means of ensuring that important steps are not missed out. However it does not mean (for example) that personal protection equipment (PPE) should not be provided until ventilation has been fitted – indeed the opposite is usually the case ie the inadequacy of other means of control means that in a clinical context one is more dependent on PPE. Whereas risk assessment has to cover all employees they can usually be assessed as groups of named individuals characterised by similar exposures depending on their jobs, tasks or specific workplaces.

- 1 The regulation states that employers shall not continue carry on work liable to expose an employee to risk unless they have made 'suitable and sufficient assessment of the risks created by that work to the health of those employees and of the steps that need to be taken to meet the requirements'
- 2 The regulation states that 'Every employer shall make a suitable and sufficient assessment of the risks to the health and safety of his employees to which they are exposed whilst they are at work; and the risks to the health and safety of persons not in his employment arising out of or in connection with the conduct by him of his undertaking'

The risk assessments must be clearly documented in writing showing for each of these groups, the assessment of the risks, how these are to be controlled (at source, by interrupting the pathway of transmission, by PPE etc) as well as any residual concerns and needs such as a lack of an appropriate level of PPE for review.

Measures and facilities that support infection control

Data on healthcare worker infections suggests that staff to staff contact in non-clinical areas can play a role in transmission of the virus in healthcare settings.^{2,3,4} It is therefore important that facilities for staff support infection control, including adequate space and ventilation.

The entire NHS estate needs to be risk assessed to better understand the risk of spread of infection, both during the current COVID-19 pandemic and in the event of future disease outbreaks. Data on staff infection should be used to identify high-risk areas, shortcomings should be documented and must be addressed, with evidence recorded of the measures taken.

It is crucial that hospitals and GP practices have adequate funding to ensure their premises are as COVID-secure as possible. Prior to the onset of the COVID-19 pandemic, at least £10.5 billion capital funding was needed to cover overdue maintenance costs in hospitals in England, Scotland and Wales alongside an extra £1bn for GP premises.⁵

A number of immediate steps, following on from local risk assessments, may be required to support improvements in this area. These include administrative controls³ and changes to work practices, such as:

- **Expanded Virtual Functionality:** Designated areas for activities such as handover are often cramped and wholly inadequate. Virtual handovers, clinical and management meetings using secure web-based software should be encouraged where possible. Multi-Disciplinary team meetings could also be conducted virtual in order to reduce contacts, where clinically appropriate.
- **All areas within the healthcare estate should be risk assessed for infection control risk and display indicators for safe use:** It is important that, as well as rooms/spaces being risk assessed, warning/guidance notices are clearly displayed on their safe use, for example setting out safe ventilation levels and appropriate mitigations should ventilation fall below this level.
- **Improved use of physical space:** Where not already in place, changes to the way staff and patients move through care settings and workplaces in order to limit exposure to potential hazard should be introduced wherever possible. Increased use of outdoor space – facilitated by improving infrastructure such as benches and shelter – should be strongly encouraged.
- **Continued infection control measures for patients and visitors in healthcare settings:** The BMA has continued to strongly advocate to ensure that infection control requirements for patients and visitors to wear face coverings, and for continued social distancing in waiting rooms, [remain in force](#) in all healthcare settings. To avoid confusion given the differing requirements in different settings, and to ensure compliance and to avoid conflict with healthcare staff, these measures must be supported by clear and consistent messaging to patients in advance of their appointments.

3 Administrative Controls: controls that alter the way the work is done, including timing of work, policies and other rules, and work practices such as standards and operating procedures (including training, housekeeping, and equipment maintenance, and personal hygiene practices).

In some cases, changes will need to be made to facilities and estates to enable 'pathway control'⁴. Such changes are likely to require additional financial support to achieve. These may include:

- **Separate staff and patient changing, toilet and showering facilities:** Some staff are having to use communal or visitor toilets to change, which are wholly inadequate for safe practice. Provision of 'staff only' changing areas with showering facilities and toilets should be introduced, particularly in offices, staff rooms, toilets and changing rooms.
- **Rest areas where staff can rest without being overcrowded:** Rest areas are crucial in giving staff respite, improving mental health, wellbeing and addressing the risk from burnout. However, rest areas for breaks, if they exist, are often cramped and overcrowded and often do not have sufficient ventilation. Staff rest areas must be expanded and allow for a good supply of fresh air, either through natural or mechanical ventilation.
- **Staff laundry facilities should be more widely available:** This would ensure that uniforms do not have to be taken home to be washed. Where this is not possible, sealed bags should be provided for uniforms to be transported home.

An increased focus on ventilation as a means of controlling the airborne infection pathway

Although droplet spread is likely to be a primary route of SARS-CoV-2 transmission,⁶ there is now clear evidence that aerosol transmission, outside of so-called 'aerosol generating procedures' (AGP) in healthcare, plays a significant and perhaps dominant role.^{7,8} This has been formally acknowledged by the World Health Organization (WHO).^{9,10} Ventilation therefore plays a crucial role in mitigating COVID-19 transmission.

Steps to improve ventilation are now being recommended in advice given to the public¹¹ and it is important that this is also applied to healthcare settings, with resources made available to support this.

The BMA has called on the UK government to set UK-wide legal standards for ventilation, in line with scientific guidance, such as from the [European Centre for Disease Prevention and Control](#) and the [Scientific Advisory Group on Emergencies](#). Financial and other resource to support implementation of these requirements ahead of the autumn and winter period, when respiratory viruses spread more easily and buildings must be kept warm, limiting options for natural ventilation, is essential.

- **Increase ventilation to reduce risk:** Ventilation can be as simple as opening a window or door. Heating, ventilation and air conditioning systems can also have a role to play, provided they allow for the exchange of indoor air with outdoor air and do not simply recycle indoor air. Such mechanical ventilation systems may be particularly important for interior spaces in healthcare settings, where fresh air from natural ventilation is not possible. Specific guidance on ventilation is available from the [HSE \(Health and Safety Executive\)](#).
- **Measuring how well ventilated spaces are:** Inexpensive equipment is available that can indicate how well ventilated a room is (for example through measuring the ppm of carbon dioxide). These should be installed more widely in clinical and non-clinical areas.

4 Pathway control is the triaging of patients based on their COVID-19 infection status and the systems and procedures in place to mitigate potential transmission, this could be a requirement for different areas and PPE levels depending on whether a patient falls in a high/medium risk pathway.

Sufficient and appropriate personal protective equipment

While there have been significant improvements in the supply of PPE since the start of the pandemic, concerns remain.

Respiratory protective equipment

RPE commonly used in medical settings – FFP3, FFP2 respirators – are classified according to qualities such as filtration efficiency and leakage to the face. These metrics are measured using standardised tests governed by European [Personal Protective Equipment](#) regulation. FFP3 respirators provide the most robust level of protection, with a maximum inward face seal leakage of 2% and a minimum filter penetration of 99%. FFP2 respirators have a maximum inward face seal leakage of 8% and a minimum filter penetration of 94%. FFP2 and N95 respirators are approximately equivalent and N95 respirators, while not CE marked, are tested to similar filtration standards under US legislation (testing of inward face seal leakage differs).

The [BMA and other professional bodies](#) have repeatedly raised our concerns about the need for higher levels of protection against aerosol transmission of SARS-CoV-2, and the need for much wider use of RPE (respiratory protective equipment). Given that PPE is centrally procured, the Government must ensure that all NHS Trusts and GP surgeries are provided with enough PPE to be able to provide the appropriate level of protection to staff, this includes fit testing.

We have previously [written](#) to the CEOs of all NHS Trusts in England and to PHE regarding their jointly-issued⁵ UK-wide infection control guidance emphasising the importance of taking a precautionary approach to protecting staff through the wider provision of RPE to all staff who treat patients with COVID-19 or suspected COVID-19. A recent study carried out at Addenbrooke's Hospital in Cambridge showed that widespread use of FFP3 respirators (in place of surgical masks) for all staff caring for patients with COVID-19 dramatically reduced, and possibly eliminated, ward-based infection among staff.¹²

The following are required of employers:

- **Provision of all [recommended PPE for all workers](#):** Employers are required to provide adequate supplies of PPE, and training in its safe use, to ensure staff remain as safe as possible in carrying out their duties. The BMA has produced [guidance](#) for individual members on refusing to treat where their PPE is inadequate.
- **Embedding safe donning and doffing practices:** The safe donning and doffing of PPE is crucial to effectiveness. Clear guidance should be given to staff on how to do this safely, with regular checks to ensure it is done safely, including (for RPE) carrying out regular fit checks. Public Health England has provided [guidance](#), including videos, on how to follow best practice.
- **Regular fit testing:** Fit testing is crucial and there must be adequate capacity to allow this to happen. Staff must be re-tested if new types of PPE are provided or if staff notice a change in fit in practice, e.g. during a fit check at donning. HSE has produced [guidance](#) on correct use of respiratory masks, including fit testing.
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- **Wider use of RPE to protect staff:** Given the widely recognised risk of aerosol transmission outside of those procedures [designated as aerosol generating](#), we do not believe the current [UK Infection Prevention and Control \(IPC\) guidance](#) goes far enough to protect staff working in settings where confirmed or suspected COVID-19 patients may be receiving care.

5 This guidance is issued in conjunction with Public Health Wales, Public Health Agency of Northern Ireland and Health Protection Scotland

As a precautionary step, employers should ensure that all healthcare professionals providing care for confirmed or suspected COVID-19 patients are provided with FFP3 respirators or equivalent, such as powered air purifying respirators (PAPR), or elastomeric reusable respirators. This may include, for example, when providing close personal care to COVID-19 positive patients in poorly ventilated areas for a prolonged period. This would also include ancillary staff who provide support in the form of cleaning or catering if they are exposed to SARS COV-2. Expanded use of respirators would need to be supported through adequate supply and fit testing capacity.

Adequate individual risk assessments

Individual risk assessments for staff are separate to, but should be informed by, workplace risk assessments that will have covered staff in groups. In this way, individual assessments, for those staff who need them, can take account of known workplace COVID-19 risks as well as mitigation for them, including the use of PPE/RPE⁶. However, individual risk assessments must reflect factors specific to individuals, such as those which may render doctors and other health care workers more susceptible to COVID-19 or increase the risk of severe disease. These factors include:

- Age, specific health and long-term conditions (including medications such as those which may modify the immune response), sex, ethnicity, disability and pregnancy.

Individual risk assessments should be regularly reviewed.

This is especially important for those who work across multiple sites, those redeployed from another role or rotating and those who may be returning to work in the NHS.

An individual risk assessment must not replace any [official guidance](#) or medical advice some doctors will have received, explaining that they have been determined as [clinically vulnerable or clinically extremely vulnerable](#) to more severe illness if infected with COVID-19. This may mean that a clinician is redeployed away from a high risk COVID-19 pathway for example. A clinical evaluation takes precedence over any other risk assessment tools.

For the most vulnerable doctors, and other healthcare staff, many of whom will have been shielding and/or engaged in working arrangements to mitigate their additional risk from COVID-19, any planned return to work or resumption of duties must be safe and appropriate, and supported by suitable and sufficient personal risk assessments.

Occupational physicians (or other suitably trained Occupational Health and Safety staff) can help in these matters, for example ranging from conducting confidential clinical assessments of the individual susceptibility and increased risk to the provision of different PPE, such as powered air purifying respirators (PAPR).

Reporting and investigation of COVID-19 cases suspected to have arisen from work

In order to learn lessons, it is essential that cases of COVID-19 which may have arisen from work through inadequate control measures are investigated. In addition to any internal investigations, there is a legal duty on employers to [notify the HSE](#) when there is 'reasonable evidence' of a worker contracting COVID-19 through occupational exposure.¹³ A report should not only outline the circumstances of the case but the remedies put in place to prevent recurrence.

6 RPE or Respiratory Protective Equipment protects the user from harmful or toxic airborne substances

In view of the above concerns about aerosol transmission, cases may need to be reported in spite of wearing surgical masks as per official guidance.¹⁴ This would allow more thorough investigation and support better prevention of occupational spread of COVID-19. It should be noted that any case in which a registered medical practitioner has highlighted the significance of work-related factors when communicating a diagnosis of COVID-19 is reportable, even if the employer is reluctant to do so.

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