Coronavirus (COVID-19)—Contradictions in aerosol generating procedures guidance for health workforce

Local Government Analysis: The recent statement by the UK Resuscitation Council that chest compressions are aerosol generating procedures (AGP) sits uncomfortably with Public Health England's (PHE) view, and consequent guidance on Personal Protective Equipment (PPE), that they are not. Paul Rogers, barrister at Outer Temple Chambers, considers the implications for employers in discharging their obligations under the Health and Safety at Work etc Act 1974 (HSWA 1974) when determining what the correct PPE is, and what advice/instructions to give staff confronted with such a situation in a care setting.

PHE publication 'COVID-19, infection prevention and control guidance' explains that the transmission of coronavirus (COVID-19) is thought to occur mainly through respiratory droplets generated by coughing and sneezing and by contact with contaminated surfaces. During AGPs however, it recognises that there is an increased risk or aerosol spread of infectious agents and advises airborne precautions must be implemented when performing AGPs.

In a work-related environment that does not normally involve AGPs or close personal contact with those who may be infected, social distancing and hygiene are the primary methods whereby the risk of transmission from respiratory droplets is being controlled. But in a social care context and for first responders/ambulance crew, work involving close personal contact with those who may be infected has to be carried out to care for those who need it. Many of those cared for will be vulnerable and especially susceptible to the worst effects of the disease if contracted. Likewise, those who care for the vulnerable are also at risk of contracting the disease. First responders and ambulance crews will perform CPR as a routine part of their jobs, and may not be able to ascertain whether the patient has the disease or may have it – especially as many carriers are asymptomatic.

A plethora of relevant guidance has been issued covering, amongst other things working in a social care context. Examples include

- How to work safely in care homes
- Infection prevention and control
- Adult social care
- Admission and care of residents during coronavirus
- PPE including dealing with acute shortages
- Supported living
- Supporting living and care homes

Some of the most difficult issues relate to the use of PPE. The infection, prevention and control guidance updated as at 27 April 2020 contains important information about when PPE should be worn. It includes a series of tables that show when various types of PPE should be worn. For example, in community and social care settings (including care homes), where there are possible or confirmed cases and direct resident care (within 2 m) takes place, the following PPE is recommended: disposable

single use gloves and apron, sessional use fluid resistant surgical mask (NOT ordinary surgical mask) and sessional use eye/face protection if risk assessment confirms this. However, for AGPs on a possible or confirmed case it is recommended that the disposable apron is replaced with a fluid repellent coverall/gown (long sleeved) and the fluid repellent surgical face mask is replaced with a single use filtering face piece respirator.

This of course begs the question what an aerosol generating procedure (AGP) is. This is explained in different PHE Guidance on PPE issued on 27 April 2020 in section 8. Broadly AGPs are defined as procedures which involve the respiratory tract and those procedures are most likely to be carried out in a hospital environment. Procedures include intubation, extubation, manual ventilation, open suctioning of the upper respiratory tract, tracheotomy or tracheostomy procedures, bronchoscopy, surgery, some dental procedures, non-invasive ventilation such as continuous positive airway pressure (CPAP), induction of sputum and high flow nasal oxygen. Certain other procedures are recognised as possibly generating an aerosol but the risk is sufficiently low it is felt that they do not represent a significant infectious risk. Procedures in this category include pressurised humidified oxygen, entonox or medication via nebulisation. It is felt that because the aerosol derives from the nebuliser chamber during nebulisation when the aerosol coalesces with the contaminated fluid or membrane then the risk of aerosol transmission ceases. As such only appropriate hand hygiene is recommended when assisting patients in removing nebulisers and masks. So far this appears relatively uncomplicated. But there is one highly contentious area relating to the definition of AGPs. This is in relation to chest compression and defibrillation routinely used in cardio-pulmonary resuscitation (CPR). The PHE guidance states: 'Chest compressions and defibrillation (as part of resuscitation) are not considered AGPs; first responders (any setting) can commence chest compressions and defibrillation without the need for AGP PPE while awaiting arrival of other clinicians to undertake airway manoeuvres'.

This means that first responders would not be required to use the highest level of PPE including face-fit mask/respirator and full length gowns. The problem is that one of the leading providers of guidance and training on resuscitation in the UK does not agree. The UK Resuscitation Council (UKRC) provides comprehensive guidance and training in all aspects of resuscitation particularly directed to healthcare professionals. According to its' website it trains annually over 135000 healthcare professionals in a variety of advanced life support courses. In its statements dated 20 and 28 April 2020, it raises its concern over the classification of chest compressions as non-aerosol generating procedures (non-AGP). It records its' view that chest compressions produce excretions from a patient's nose and mouth and as such irrespective of whether this is via aerosol or droplet or both, this 'poses a demonstrable risk to Health Care Professionals (HCPs)'. As such the UKRC recommends the use of level 3 PPE – ie long sleeved fluid resistant surgical gown, face fit filtering mask/respirator, eye protection and gloves. In reaching its view on chest compressions, PHE considered evidence in the report of 24 April 2020 published by the New and Emerging Respiratory Threats Advisory Group (NERVTAG), which had been asked to report on the procedures to include in the list of AGP and in particular both NERVTAG and PHE considered chest compressions and defibrillation. The UKRC disagrees. In a nod to UKRC, PHE acknowledges that healthcare organisations may choose to advise their clinical staff to wear AGP PPE when performing chest compressions but '...strongly advise that there is no potential delay in this life saving intervention.'

This may look like a battle over principle set in the context of limited resources for clinicians in hospital settings, but as in many battles there is a risk of collateral damage. It is clear that PHE wants emergency life-saving care to be rendered without delay – which may entail when changing into the higher level of protective equipment - but this 'reasonable' disagreement about levels of PPE poses a real dilemma for care home owners and staff.
Guidance by PHE 'Covid-19 How to work safely in care homes' is express that its' recommendations about PPE assume 'that care workers are not undertaking aerosol generating procedures AGPs'. The guidance goes on to prescribe the level of PPE required depending on the type of contact with an un-diagnosed, diagnosed or suspected diagnosed patient. Greater levels of PPE are required for all situations of direct contact, and for staff within 2 m of a resident who is coughing even if not providing direct care. This PPE will include single use disposable gloves and apron, single use fluid resistant surgical mask (not face fit), sessional use eye protection depending on risk assessment. For staff helping residents showing no symptoms, and where no direct care is given but the staff member is within 2 m providing say a meal or the like, it states only a sessional use surgical mask is required with eye protection if risk assessed as necessary. For staff working in a communal area but with no direct contact but potentially coming within 2 m then a sessional use surgical face mask only is advised. These differing levels of PPE work because it is assumed no AGPs are being undertaken. But what is an employer to make of the disagreement between UKRC and PHE on this important issue? Can the employer simply ignore UKRC?

What are employers of care staff to advise their staff to do if a resident goes into cardiac arrest and that resident has or may have coronavirus? What advice or instructions are employers to give to staff visiting the elderly in their own homes who suffer arrest or have suffered arrest on arrival? What level of PPE should employers ensure staff wear as a matter of routine, if they are to avoid delay in rendering CPR whilst at the same time protecting themselves and following PHE Guidance?

The duty under HSWA 1974, s 2 is to ensure as far as is reasonably practicable the health, safety and welfare of employees. This will be based upon a risk assessment. The UKRC makes clear that it considers there is an increased risk of contracting this disease whilst performing chest compressions – whether as an aerosol or droplet – which they say requires a higher level of PPE than that being recommended by PHE. PHE's view about CPR and AGP is to some extent undermined by the concession that healthcare organisations may choose to advise staff to wear the AGP PPE.

In an acute hospital setting it may be more straightforward for a Trust to provide the higher levels of PPE because it knows that it will have to carry out AGP in any event to some extent, and so adopting a belt and braces approach to AGP PPE for CPR is a modest additional precaution. For care homes this is not so simple. First, while most care homes will have some level of CPR training and may well have undertaken CPR on occasion, they will likely never have had to consider the purchase or use of PPE for this and certainly not AGP PPE, nor will they have trained staff to use such PPE. Second even if AGP PPE was bought, who should be using it? Further, face fit masks have to be fitted for the individual user. The HSE provides detailed guidance about how this should be done. Would every staff member be required to wear these with full kit for every resident on the off chance that they may need to render CPR? Would only those caring for patients with coronavirus or suspected coronavirus need full AGP PPE in the event they needed to render CPR, and if so given that CPR is likely a rare event are they to be required to wear such PPE full time when on duty? Third, given the current PHE Guidance and the expectation that CPR will be a rarely needed even, can an employer justify not using AGP PPE

on the basis that the delay in changing from PPE being used in normal care and putting on AGP PPE is likely to render the CPR less effective as time is of the essence? Could the risk of contracting the disease by the staff member and the risk to the patient through failure to give timely CPR be ameliorated by omitting the rescue breaths (as advocated by St John's Ambulance during coronavirus) normally part of CPR together with an instruction to only carry out chest compressions while wearing gloves, apron and a fluid repellent surgical mask FRSM and eye protection? Who should perform the CPR, and should there be a dedicated staff member kitted out with AGP PPE to render care as necessary in the event of an emergency, but performing no other duties? So what is a staff member to do and what are employers supposed to advise/train their staff?

Should employers advise CPR trained staff not to perform CPR in the current circumstances and call an ambulance instead? This will feel unconscionable to many employers and staff who care for the residents and vulnerable persons they look after. Do employers order a stock of face fit masks and full AGP PPE, and fit and train staff in their use so that they can change into that PPE as quickly as possible if they need it while observing appropriate disposal and hygiene protocols while changing? Would a compromise approach be that only those trained in CPR and who are wearing gloves, disposable apron and fluid repellent masks with eye protection can provide CPR?

Perhaps this difficult area is one where HSE will have to show the flexibility and proportionate approach it has declared it will during this crisis in its press release. HSE's open letter to the food industry relating to PPE for bakeries provides only a crumb of comfort for those who have to provide PPE for bakers. HSE seems almost reluctant to modify PPE requirements and makes clear that following an investigation prosecution will still remain an option. It gives this insight into the enforcer's attitude: 'Employers that can demonstrate effective control of risks with the appropriate combination of good working practices, engineering control and PPE are not likely to face enforcement action.' A crumb indeed.

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