

An open letter to all Members of Parliament

Dr Rhys Thomas & Paul Waldeck
PP-L Health Technology Solutions
Kesteven Business Centre
Sleaford
NG34 7DT

0800 471 4871

enquiries@pplpro.co.uk

COVID-19 guidance must address airborne transmission

To all Members of Parliament,

As the UK struggles to overcome the ongoing COVID-19 pandemic while also protecting jobs and the economy, it is my belief that urgent action is needed to amend the government's official guidance in order to curtail the spread of the virus.

While the government and organisations across the country should be praised for the positive steps they have taken to prevent the spread of COVID-19, my colleagues and I at PP-L Health Technology Solutions are concerned that crucial shortcomings in official guidance mean that the airborne transmission of the virus is being largely overlooked.

Despite mounting scientific evidence regarding the risk of COVID-19 being transmitted through airborne respiratory microdroplets, also referred to as aerosols or bioaerosols, it is our view that the current "COVID-secure" guidance does not provide adequate protection against this means of transmission.

We are therefore asking for you to join us in calling for this gap in our armour to be strengthened by requiring the use of face masks in a wider range of indoor settings and requiring improved ventilation to buildings and transport.

We are also repeating calls from many in the global scientific community for safe and competently engineered UV-C air disinfection systems to be required in all low temperature indoor work environments where adequate ventilation is not possible, such as in food processing facilities.

In addition, we ask that COVID-secure guidance is also changed to recommend the use of these proven COVID-destroying systems in all other indoor work spaces, venues where the public gather indoors and in transport environments where air ventilation is poor or where air is largely recirculated.

It is our belief that these additional measures are urgently needed to prevent high rates of COVID-19 transmission in a wide range of settings, particularly in food manufacturing premises where chilled indoor environments represent the perfect breeding conditions for the virus.

With the seasons turning against us and the weather turning colder, we must act quickly to contain and reduce the infection risk. Ongoing lockdowns are not sustainable but without immediate and effective action, they may be inevitable. We have no doubt that science will lead us out of this crisis, but a solution will not solely be found in a vaccine or sequence of vaccines. We can also destroy this virus pre-infection by cleaning surfaces and by sterilising the air with a simple decades-proven medical technology.

During my career, I worked at DSTL Porton Down where I gained a MD/PhD through my studies on Inflammation, and as a Consultant Anaesthetist I understand the physics and physiology of humans who are critically ill with COVID-19. Earlier this year, I invented a COVID EMERGENCY OXYGENATOR; one of only two devices to succeed in the Government's Covid Emergency Ventilator Challenge, winning approval by the MHRA. A CPAP device specifically designed as a biological countermeasure for COVID-19, the device is now about to complete its medical trials, both in the UK and overseas.

Now, I am Chief Medical and Scientific Officer at PP-L Health Technology Solutions where I work closely with our Chief Technical Officer, Chartered Engineer, Paul Waldeck who is also co-signatory to this letter, who has spent a 30+ year career designing for and working in safety critical environments. Our aim at PP-L is to raise awareness that there are proven "old-tech" solutions that can help us all live with this virus and manage/reduce its risk of spreading. These solutions, when specified correctly, are safe, simple, cost-effective, non-chemical, rapidly installed and are able to give us a competitive edge to get our economy back to where it was before the pandemic.

At its core, the government's 'COVID-secure' guidance was derived from measures to prevent the spread of a pandemic with flu-like symptoms. As a result, the guidance sets out several steps to prevent the spread of COVID-19 through contact with contaminated surfaces but it does little to prevent the person-to-person and trans-airborne respiratory transmission, which is the primary means by which COVID-19 is spread.

With more being known about COVID-19 through extensive scientific research, it has become more and more apparent that this shortcoming must be urgently rectified in order to control the virus and live with it into the future.

Research published since the start of the pandemic has revealed that microdroplets/aerosols which carry COVID-19 are capable of remaining viable and airborne for up to 16 hours and can travel up to eight metres in cool, indoor environments.^{1 2 3}

Acting in good faith with what was known back then, business leaders have followed official guidance to invest in measures which they believed would help to make their organisations 'COVID-secure'. This includes interventions such as enhanced and regular cleaning, steps to ensure 1m+ social distancing, staggered shift patterns, more regular hand washing, the provision of alcohol gels, and the use of additional PPE such as gloves and visors.

While many of these steps will undoubtedly help to reduce the spread of COVID-19, more interventions are urgently needed to prevent person-to-person and airborne transmission.

Government guidance does recommend windows and doors to be opened where possible, and this has been demonstrated to be quite effective during the summer months. But the advice acknowledges that there are built or transport environments where this would not be possible or suitable. This is true, but no effective alternative measures to prevent airborne transmission are recommended for such environments, meaning these spaces can become high risk areas for the transmission of the virus.

This issue has been observed in many countries around the world, and this summer, 239 internationally renowned scientists wrote to the World Health Organisation (WHO), urging it to acknowledge the compelling evidence of airborne transmission⁴. This has since been acknowledged by WHO, but neither WHO nor the UK government have updated their guidance accordingly.⁵

In our view, this failure to keep pace with the scientific evidence and appropriately review/update the legislation, regulations, guidance or offer support for companies with this necessary next level of COVID-Security is potentially putting health and

¹ ['Persistence of severe acute respiratory syndrome coronavirus 2 in aerosol suspensions', Fears et al, CDC, Emerging Infectious Diseases Journal, Volume 26, Number 9, September 2020](#)

² ['Aerosol and surface stability of SARS-CoV-2 as compared with SARS-COV-1', van Doremalen et al., The New England Journal of Medicine, April 2020](#)

³ [LSHTM, Leclerc et al, June 2020](#)

⁴ ['Open letter: 'It's time to address airborne transmission of COVID-19', Morawska, Milton, Infectious Diseases Society of America, Oxford University Press, July 2020](#)

⁵ ['Transmission of SARS-CoV-2: implications for infection prevention precautions', WHO July 2020](#)

livelihoods at risk. This is why we ask that you support our call for the matter to be addressed by Parliament as a matter of urgency.

Across the UK and throughout Europe, there have been hundreds of outbreaks of COVID-19 at food factories and food preparation sites, with 47 such outbreaks in the UK alone. These are thought to have led to at least 1,461 infections and six deaths in the UK, but the true figures are expected to far be higher.⁶ Indeed, the London School of Hygiene and Tropical Medicine has reported that food processing factories have been responsible for some of the biggest localised outbreaks in the UK.⁷

Meanwhile, the American Centre for Disease Control and Prevention (CDC) estimated that, as of June, half of all cases in the country could be traced back to food processing plants; specifically meat-processors.⁸

Presently, the COVID-secure guidance for these workplaces simply includes steps to ensure 1m+ social distancing and the advice that 'all doors and windows should remain open wherever possible to allow greater ventilation'. The Food Standards Agency also encourages the use of face masks, but warns that "inappropriate use and handling of face coverings could present a risk to food safety and hygiene as well as to the health and safety of staff." Meanwhile, the temperature drop by opening windows in ambient environments could also negate the purpose for doing so in the first place, especially as we head into winter.^{9 10}

Given the severity of the risk, it is our view that these steps fall far short of what is required to meaningfully reduce the risk of transmission in these environments.

The solution we are proposing has been demonstrated in multiple studies to be a highly effective measure to significantly reduce respiratory transmission.

UV-C in particular, has proved to be very effective in rapidly inactivating and destroying airborne coronaviruses, including COVID-19. This technology has been used for over a century as a means of destroying harmful pathogens, and its tremendous effectiveness has been proven by more than 4000 research papers to

⁶ ['Unreported Deaths' A Pirc Sector Briefing: Food Production, Alice Martin, Pirc.co.uk, September 2020](#)

⁷ ['What settings have been linked to SARS-CoV-2 transmission clusters?' Leclerc et al, London School of Hygiene and Tropical Medicine, June 2020](#)

⁸ ['COVID-19 among workers in meat and poultry processing facilities - 19 states', Dyal et al., CDC, April 2020](#)

⁹ [Food Standards Agency, 'Adapting food manufacturing operations during COVID-19', June 2020](#)

¹⁰ [DEFRA, 'Guidance for food businesses on coronavirus \(COVID-19\), September 2020](#)

destroy pathogens and much more complex bacteria and viruses than this latest coronavirus.^{11 12 13 14 15 16}

It should also be recognised that UV-C is also deployed as a defence technology by military forces around the world against biological weapons. Make no mistake; we are in a battle against this virus and so we should not hesitate from using the best weapons we have to defeat it

While we in no way seek any favour or promotion, we wish to raise awareness and help businesses and authorities to meet their responsibilities and protect the public as far as is reasonably practicable. As such, we believe that the installation of appropriate UV-C air disinfection systems can do just that.

Unfortunately, few have ever heard of germicidal UV or UV-C outside the medical or scientific communities, which is why we have written this letter intended to inform you, our elected representatives and policy makers, of the potential use of this technology to combat COVID-19.

Over recent months, we have sought to convince organisations including the FSA, FSE and ORR of the merits of our proposed measures, and while each has acknowledged issues with present guidance and recognised the scientific advice regarding the use of UVC, none have updated their guidance owing to what we see as a lack of urgency on their part.

As has been made clear by world leading public health experts and health authorities, the nature of COVID-19 means it is likely to be a long term, if not permanent, threat to public health which cannot be eradicated by a single vaccination. As such, we have a responsibility, indeed, a legal duty under several Acts of Parliament, to find ways to protect ourselves and each other from the virus now and in the future by finding ways to live with it.

We believe that the measures that we are bringing to your attention will help to protect the nation, reduce the threat posed by the virus and enable the British

¹¹ [‘Airborne SARS-CoV-2 is rapidly inactivated by simulated sunlight’, Schuit et al., The Journal of Infectious Diseases, Volume 222, Issue 4, August 2020](#)

¹² [‘Does ultraviolet \(UV\) light kill the coronavirus?’, The National Academies of Sciences Engineering Medicine’, Based on Science, April 2020](#)

¹³ [‘Effect of Ultraviolet Germicidal Irradiation on Viral Aerosols’, Chris Walker, University of Texas Health Sciences, Environmental Science and Technology, September 2007](#)

¹⁴ [‘Back to Normal: An Old Physics Route to Reduce SARS-CoV-2 Transmission in Indoor Spaces’, Garcia de Abajo et al., ACS Nano, American Chemical Society, June 2020](#)

¹⁵ [‘UV-C irradiation is highly effective in inactivating and inhibiting SARS-CoV-2 replication’, Bianco et al., medRxiv, June 2020](#)

¹⁶ [‘Can biowarfare agents be defeated with light?’, Vatansever et al., Virulence, Nov 2013](#)

people to live and work in a way which makes the 'new normal' far more viable, sustainable, safe and prosperous. Indeed, these measures would help to make the UK a world leader in the COVID-secure economy.

We therefore ask every Member of Parliament to do whatever they can to encourage and require more organisations to achieve better levels COVID-security by enhancing current air circulation and sterilisation arrangements with UV-C air disinfection systems, particularly in higher risk environments such as the food processing industry, or on public transport or where larger numbers of people can congregate in the same "air space".

For more information on UV-C air disinfection systems, please visit our website www.pplpro.co.uk, or contact either of us directly.

We thank you for taking time to consider and remain at your disposal to assist with further information or appropriate questions.

Yours sincerely,

Dr Rhys Thomas MM'BBs MD FRCA Dip IMC RC'Ed
Chief Medical & Scientific Officer
PP-L Health Technology Solutions

Paul Waldeck B.Eng.(Hons.) ,C.Eng., M.I.C.E., M.I.Struct.E..
Chief Technical Officer
PP-L Health Technology Solutions