MAY 2020

PANDORA DENTAL

In Association With

IndepenDent
PRACTICE OWNERS UK

PROTOCOL

To allow dental practices to reopen.

Issued on behalf of Pandora Dental in collaboration with IndepenDent Practice Owners UK

Issued on behalf of Pandora Dental and IndepenDent Practice owners UK by Positive Communications. Co-authored by Dr Adam Nulty.
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Protocol

To allow dental practices to reopen.

Dentistry In Crisis

a short introduction

"We are faced with an unprecedented challenge in the dental profession. As dentists, our primary aim is to help and treat patients in need, and we find ourselves unable to perform this function.

Pandora Dental's primary aim is to open dentistry to ensure it is accessible to all those who have a need. We have extensively researched best practice and clean air technologies available throughout the globe to create what we believe is a gold standard protocol for dental practices to open safely during this Covid-19 pandemic and beyond.

The protocol delivers an incredibly low risk of cross infection to patients and is the way forward for dentistry at this time."

Dr Mark Cronshaw

President of Pandora Dental

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The IndepenDent Practice Owners UK

Authors :

Dr Mark Cronshaw
& Dr Adam Nulty

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Positive Communications

about us

A better way - with a much lower risk of cross infection

A pioneering group of 650 practice owners representing over 1,100 dental practices in the UK, have researched and developed, what they feel is a better way to deliver dentistry to patients in need, with the aim that all those who require face to face care are able to access it sooner rather than later.

Together we have spent the past six weeks of lockdown researching pioneering technologies and materials, and pooling resources to create a pathway which mitigates the risk of cross infection to patients to less than 0.1%.

Surgeries which adhere to these carefully constructed protocols should be able to safely and confidently open to patients.

We have been working hard to plan ahead to prepare for a safe return to work.

contacts

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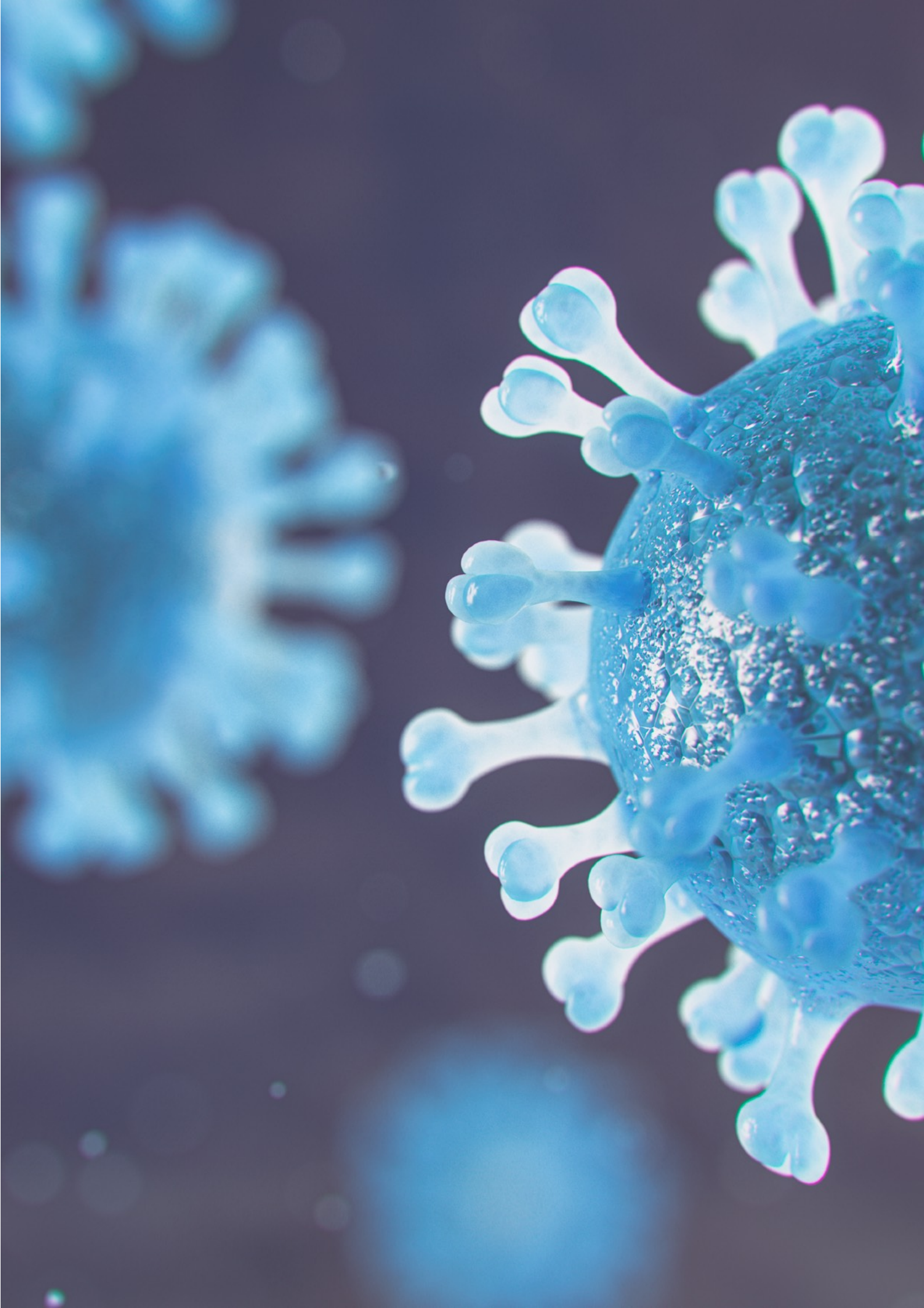
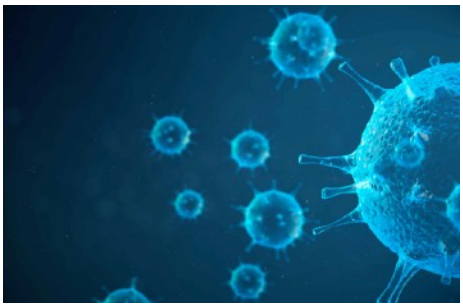


New dental protocol advocated to allow dental practices to reopen and restore an essential service

During the past six weeks since the Covid-19 lockdown, the number of dental appointments and treatments missed is staggering. Extrapolating the figures from NHS England alone[1], it is estimated that around 1.3 million adult appointments, including 4.5 million courses of treatment as well as 808,000 child appointments have so far been missed! Significantly more, if you add in numbers from the other parts of the UK.

As well as regular check-ups and treating pain, dentists also undertake the vital work of mouth cancer screening. Head and neck cancers are the 8th most common cancer in the UK with incidence, increasing over the past decade by a third. In a typical six-week period, nearly 1,000 cases are diagnosed[2]. Up to 88% of this type of cancer is preventable with dentists highly trained to identify susceptible patients and give preventive advice. Caught early, this is a treatable cancer; caught late, it has a very poor prognosis.

Dentistry is a key health profession closely involved in maintaining both oral and systemic health[3]. The public sees a high street dentist far more frequently than their GP, and dentists are trained to recognise the signs and symptoms of many common diseases as well of course as identifying and dealing with many common dental problems. During the current crisis, the absence of dental examinations and care is resulting in a backlog of untreated diseases which will in time have a considerable fiscal cost for the NHS medical and dental services at every level. In the interests of public health and to save large future costs, it is imperative that dentists are permitted to return to work as soon as possible.[4]



“The protocols in this document aim to dispel any concerns on safety using sound evidence based practice”

For those of us unfortunate enough to experience dental pain or emergency during this lockdown period, our route to care is far from easy, with the need for numerous phone calls, remote prescriptions for antibiotics that may or may not work; and for those in severe need a trip to a regional emergency hub, which were quickly put together post lockdown to treat dental emergencies, and which can be up to an hour away from home[5].

Urgent Dental Care Centres (UDC’s) which are treating emergency patients operate with level 3 PPE and include protocols to mitigate risks associated with treating infected patients during a pandemic. The operating protocols include fully ventilating the treatment room by leaving windows open for half an hour after each patient is treated, followed by a full clean down for a further extended period of time. Given these constraints, it is unsurprising that each dentist is only able to treat 4 patients per session compared to the usual 12 in normal circumstances[6]. The dental profession is clearly facing an unprecedented challenge, with millions in need of treatment unable to access sufficient care.

2020 COVID-19 & Dentistry

Aerosol Generating Procedures

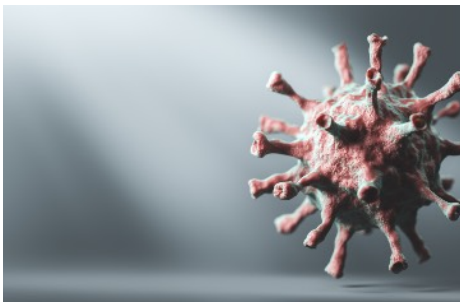
When working on teeth, as well as in essential hygiene therapy, there are many aerosol generating procedures where the air can become laden with spray. As this can be contaminated with blood and saliva, this led to the emergency recommendation to stop this type of procedure.[7] However, practices have a range of processes available to deal with this problem and, by adopting a layered approach to risk management 99.9%[33] of the potentially hazardous materials can be safely removed.

Stopping dentists and hygienists from providing these types of treatments results in the unnecessary loss of many teeth, plus there are associated serious complications and concerns for the patients' welfare as a consequence. Also any phased return to normal services would severely undermine the financial viability of many independent surgeries resulting in the closure of around 71.5% of all high street dental practices within 3 months according to a recent poll by the British Dental Association. This would result in a crisis in public health due to late diagnosis and treatment. The risks and costs associated with the consequences far outweigh the theoretical concerns of the need to protect the patients and the dental team from Covid-19.

After reading the details of this new pathway developed by Pandora Dental and the IndepenDent Owners Group, Professor Mike Lewis commented "*I agree with all the points advocated in this protocol. This is all common sense. Let's get back to treating patients safely and helping our staff feel safe too.*"

Dental Professionals have historically provided exceptional levels of care and expertise in implementing scientific research and government advice. Simply put, implementing infection control protocols for the safety and welfare of patients and staff is commonplace in Dentistry.[7] Indeed as dental professionals we regularly prevent the routing methods of transmission that COVID-19 presents.[8,9]

"Let's get back to treating patients safely"



> ***"Simply put, implementing infection control protocols for the safety and welfare of patients and staff is commonplace in Dentistry."***

2020_ COVID-19 & Dentistry

Current Worldwide status of the employment of PPE

As of April 2020, all dental care in the United Kingdom has been provided through Urgent Dental Care Centres (UDC) based in regional centres as all Dental Practices are closed on the direct instruction of the Chief Dental Officer of England.[10, 11, 12, 13]
This document does not aim to repeat the UDC instructions or Standard Operating Procedures (SOPs) which outlining the use of PPE [14] but there is a stark contrast between the PPE employed by these UDC centres and the provision and use of PPE worldwide.[15]

Italy
http://www.aio.it/html/uploads/2020/04/DVR-AIO.pdf
http://www.aio.it/html/uploads/2020/04/proposta-linee-guida-AIO-rev-1.pdf
http://www.aio.it/html/uploads/2020/03/Indicazioni-Specifiche-Prevenzione-Infezione-Coronavirus-1.pdf

Germany
https://www.bzaek.de/berufsausuebung/sars-cov-2covid-19/risikomanagement.html
http://dahz.org/wp-content/uploads/2020/04/DAHZ-Stellungnahme-Corona-20.04.2020.pdf

EU
https://www.ecdc.europa.eu/sites/default/files/documents/Infection-prevention-control-for-the-care-of-patients-with-2019-nCoV-healthcare-settings_update-31-March-2020.pdf

Portugal
https://www.dgs.pt/directrizes-da-dgs/orientacoes-e-circulares-informativas/orientacao-n-0222020-de-01052020-pdf.aspx

Switzerland
https://www.sso.ch/fileadmin/upload_sso/5_Newsletter/2020/Covid-19-Positionspapier3-7.pdf

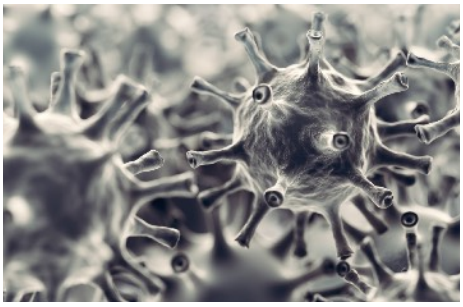
USA
https://success.ada.org/~/media/CPS/Files/Open%20Files/ADA_Return_to_Work_Toolkit.pdf

Spain
https://www.consejodentistas.es/comunicacion/actualidad-consejo/notas-de-prensa-consejo/item/download/1790_197f2dbe5d4c8a1c28ac99fc5263518b.html

France
https://ordre-chirurgiens-dentistes-covid19.cloud.coreoz.com/files/COMMUNIQUE%2030AVRIL-EXTRAIT%20RECO.pdf

Canada (British Columbia only)
https://www.cdsbc.org/Documents/covid-19/Expectations-Pathway-COVID19.pdf

Australia
http://www.cec.health.nsw.gov.au/__data/assets/pdf_file/0016/581002/Application-of-PPE-in-Response-to-COVID-19-19-March-2020-V1.4-rev.pdf
http://www.cec.health.nsw.gov.au/__data/assets/pdf_file/



"There is a stark contrast between the PPE employed by these UDC centres and the provision and use of PPE worldwide."

Country	Mask		Gown
	Non AGP	AGP	
USA	Surgical Masks can be used Dentist's Discretion	N95/FFP2	Dentist's Discretion – Use if available
ITALY	Double Surgical Mask (unless local guidance states otherwise)	FFP2 / FFP3	Yes
PORTUGAL	Surgical Mask	FFP2 / FFP3	AGPs
GERMANY	Surgical Mask	Surgical Mask or if suspected/covid +ve then FFP2 / FPP3	AGPs (Dentist's Discretion) & Covid +ve patients (to incl. a hood)
SWITZERLAND	Surgical Mask	Surgical Mask if Rubber Dam used FFP2 / FFP3 if no Rubber Dam	Covid +ve patients
SPAIN	Surgical Mask	FFP2 / FFP3	AGPs incl. cap & shoe cover
EU	Surgical Mask	FFP2 / FFP3	AGPs or Covid +ve
AUSTRALIA	Surgical Mask	Surgical Mask (with rubber dam) FFP2 (if suspected or Covid +ve)	Dentist's Discretion dependent on procedure for –ve patients
FRANCE	Surgical Mask	FFP2	Yes or disposable plastic apron and cap
CANADA (BRITISH COLUMBIA)	Surgical Mask	FFP2	Yes

Cross Infection Protocol

Reduce Risks for staff and patients

Pandora Dental and IndepenDENTs Cross Infection Protocol

This protocol aims to reduce the risks associated with aerosol generating procedures down to around 0.1% risk, and comprises 8 steps which will cumulatively affect the overall risk and reduce the impact on the provision of general dental practice.

1

Pre-treatment Screening

Identify high risk to treat patients, taking history and temperature checks.

2

Clean the mouth

All patients to use an anti-microbial mouthwash which is 99.9% effective at killing coronaviruses on arrival at the dental practice.

3

Clean the water supply

It is also being recommended that hypochlorous acid (which is anti-viral and anti-bacterial) is added to the water supply used in the consulting rooms. This is an agent widely used in the food industry and it is non-toxic to people, although highly effective against pathogens.

4

Minimise droplet release in the mouth

Affectionately known to dentists as 'tooth raincoats', rubber dams enable dentists to work on the teeth and ensure that gums and saliva are not unnecessarily exposed to the environment. Pandora recommend rubber dam treatment is used for every patient, wherever possible.

Pandora Dental's Cross Infection Protocol

If we can reduce the overall effect on the provision of dental care using these simple steps, then the best interests of patients will be served.
For example, the introduction of air purifiers can, depending on the model and room airflow, completely change the air in a room in 5 minutes. This is around 25 minutes less than the 'open window' practice used by the UDC's and permits significantly more patients to be safely treated in a day. This essential step secures the financial viability of many independent practices and ensures these vital services continue to be available in a safe and caring environment.

Reduce Risks for staff and patients.

5

PPE

All dental professionals working in practice to wear appropriate levels of PPE. A survey conducted by Pandora Dental amongst 5,755 dental professionals shows only 7% experienced Covid-19 symptoms prior to the lockdown, which is much lower than the general population. This outcome can be attributed to their routine use of good cross infection control.

6

Clean the air

Air purification systems have been proven to effectively remove pathogens in the air, and ensure that airborne, droplet viruses, such as Covid-19 are neutralised before they are inhaled. This pioneering technology is used widely in hospitals and clinics worldwide, and the typical time to completely change the air in a room is 5 minutes

7

Clean the consulting room and equipment

All dental practices are already required to thoroughly clean the consulting room and sterilise equipment between patients and sufficient time is allowed between patients to ensure this is conducted effectively. Many practices are also installing the anti-viral clean air systems in the reception and waiting areas.

8

Reduce any infection laden aerosol spray which is released

Practices have a range of high volume suction aspirator options available to deal with this problem to the extent that 99.9% of the potentially hazardous materials are safely removed.

Evidence Base for Protocol

Pre-Screening
The novel coronavirus can be passed from person to person through respiratory droplets.[16,17] This is significant as symptom free patients may in theory facilitate transmission in the dental environment.[18] We intend to avoid a Covid-19 positive patient entering the building through pre-arrival telephone questionnaire screening and/or tele-consultations, and on patient arrival a temperature check (<37.3 degrees Celsius).[19,20]

Antimicrobial Rinse
Pre-procedural mouthwashes have historically been shown to be effective in the reduction of aerosol contamination from aerosol generating procedures.[21] As the novel coronavirus is vulnerable to oxidation, a pre-clinical environment mouthwash of Hydrogen Peroxide (HP) can effectively inactivate the virus[22]. If the patient uses a (1.5%-3%) HP mouthwash on entering the practice, this also reduces potential spread and transmission outside of the clinical area.[23]

Water Supply Cleaning
The SARS-Cov-2 virus has been shown to remain active and infectious in sewage and water-lines.[24] Hypochlorous Acid based disinfectant has been shown to eliminate biofilms and disinfect the waterlines.[25,26]

Rubber Dam
The airway, salivary glands and tongue are potential sites for the Covid-19 virus due to the expression of ACE2 proteins in their cell linings to which the virus binds.[27] Rubber dams and specialist suction devices significantly minimise the production of saliva aerosol where high speed hand-pieces and ultrasonic scalers are used.[28]

Visors and Eye Protection
Exhaled aerosol size depends on the characteristics of the fluid, the force and pressure at the moment of emission, environmental conditions and remain suspended in the air for varying amounts of time depending on the particle/droplet size.[29] As such, protective glasses and visors are advisable to prevent direct contact of particles and droplets from suspended infectious respirator particles entering through the eyes.[30]

"without mitigation, symptom free patients may facilitate transmission in the dental environment"

> **"There is no evidence that ultra-high filtration respirator masks add significant value. They are costly, uncomfortable, technique sensitive, in short supply and require scarce specialist fit testers."**

FFP2 or FFP3 Masks?

The use of standard Mask or FFP2 (N95) mask or indeed FFP3 (N99) mask and their relative effectiveness has been widely debated. Current SOP from NHSE advise the use of FFP3 (N99) masks in all Urgent Dental Care Centres. However for standard, none-aerosol generating procedures, standard 3-ply surgical masks have been shown as effective as respirator masks.[31] Furthermore, **For non-AGPs, there is no evidence that respirator masks add value** over standard masks when both are used with recommended wider PPE measures.[32] In combination with the other measures in these protocols, there is also little benefit or additional protection (0.4%) of FFP3 over FFP2.[33]
It makes practical sense based on this evidence to use standard 3-ply surgical Masks for non-AGP and if the other protocols are employed, fit checked FFP2 masks for AGP procedures.

Gowns

In all settings, when in close patient contact, scrubs with disposable apron should be used and when carrying out aerosol generating procedures, long sleeved gown.[34] (reusable and washable with detergent if possible to reduce waste and continuing cost in practice).

Air Purifiers (Advisory)

Ventilation rates, ventilation strategies, air filtration and differential pressure control can contribute to the spread of airborne infectious diseases in hospitals.[35] The NHSE has recommended 30 minute intervals between patients at UDC centres based on the time taken for particle settling.[36] Air purifiers that employ a combination of HEPA filtration, active carbon filtration and UVC can reduce this time dependency on their air turnover ability and the size (volume) of the room.[37, 38, 39] Air purifiers measure their ability in volume cycles per hour and modern units can achieve a turnover rate of 10-20x times/hour. Wall mounted units or free standing units positioned close to the patients' feet can optimise this outcome. [40] We advise these as advisory only for practices who want to reduce surgery turnaround times and create a healthier working environment.[41,42,43,44]

High Volume Suction

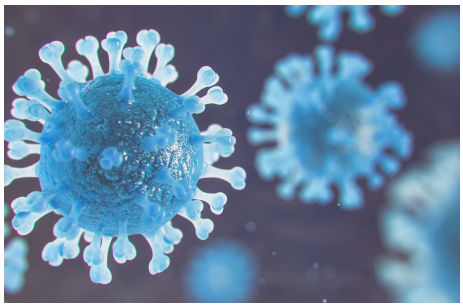
The use of high-volume evacuation HVE/suction has been shown to reduce aerosol contamination coming from the operative site by 90%.[45]

Cleaning Down of Surfaces and Floors

Surfaces should also be clear. Disinfectants based on hypochlorous acid or chlorine dioxide solutions are active against enveloped viruses, such as 2019-nCoV and other coronaviruses.[25] After each patient, cleaning down of vertical surfaces, contact surfaces and flooring with the use of hypochlorous acid or chlorine dioxide based disinfectant solutions should be carried out as per HTM0105 best practice standard[14]

Back to work

Summary



> **“There is no reason to delay the return to work of dental professionals any longer.”**

With proper execution of the protocols discussed, using four handed dentistry, we must be permitted to return to work and provide much needed care for patients across the United Kingdom.

With the use of;

1. Pre-visit and pre-treatment arrival screening

2. Mouthwash on arrival with (1.5% - 3%) Hydrogen Peroxide

3. Water supply cleaning

4. Visors, gowns and masks. (Standard mask, visor, disposable apron in non-AGP and FFP2 mask (fit checked), visor and disposable/re-usable full length gown in AGP)

5. Rubber dam usage wherever possible.

6. High Volume Suction.

7. Air Purifier. (Advisory) Able to turnover room air volume in under 5-10 minutes.

8. Compliant cleaning to HTM0105 best practice standards with hypochlorous acid or chlorine dioxide based disinfectant solutions

There is no need to delay dental professionals' return to work any longer. The costs to public funds and the detriment to public health of protracted closure, or a highly restricted return to a full range of treatments is not acceptable and contrary to the national interest.

Many adjustments will be required by dental professionals to adapt to the new model of practice, however this is attainable at zero cost to the exchequer by the majority of independent high street dental practices. New practices, and practices being refurbished, should consider positive airflow and upgrading air-conditioning to include HEPA filters within future considerations.

If all of the measures in this protocol we advise are employed, it will be possible to maintain the safe, sound and timely operation of dentistry, with a minimal time between patients of 5-10 minutes. In recognition of the essential benefits offered to public health, many developed nations have now restored full primary dental care services. We believe that this is equally attainable in the UK without delay.

thank you end_

Dentistry in crisis

Dr Cronshaw concludes: *"In a recent survey of our members, it was found that each of us received between 2-4 patient calls a day who are asking for emergency dental care, which would require us to direct them to a UDC. There are 35,000 registered dentists in the UK, and if the pattern we have found is true, that would mean between* ***70,000-140,000 patients A DAY are in need of urgent dental care,*** *which we are unable to give them - nor will we be able to for some time. As a profession, we are keen to help all our patients and feel that the pathway we have mapped out is clearest means by which we can achieve this safely and effectively.*
We are seeking an urgent review of any proposed restrictions to dental treatment options and are speaking to The Health Minister Matt Hancock and other MPs, as well as all the health regulatory bodies."

Morale in the profession is at rock bottom. A survey conducted by Pandora amongst 4,900 dental professionals, released on 5 May 2020 has revealed that a quarter of all dentists are planning to leave the profession as a result of concerns which have been exacerbated by the Covid-19 crisis (including stress, financial, required new protocols of PPE, and limitation on the treatments they can carry out).

If these concerns are not addressed immediately there will be far fewer dentists left to treat people once practices are allowed to open.

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PROTOCOL

To allow dental practices to reopen.

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