

an FFP3 mask. These masks are seen as the gold standard at present, but obtaining these masks is difficult due to the overall increased demand for PPE during the pandemic.

One thing is clear, when an aerosol generating procedure (AGP) is to be undertaken, such as during an extirpation, an FFP3 mask is necessary due to the aerosol being produced potentially acting as a medium by which COVID-19 could be easily transmitted to the operator, team members and patients.<sup>1</sup>

Given this knowledge, it raises the questions as to why FFP3 masks, or similar PPE, are not commonly used in the dental setting already. As dental professionals, we undertake AGPs everyday as we are reliant upon high speed handpieces, surgical handpieces and 3-in-1 syringes to undertake our work.

Gloves, hand washing and full-face visors are all commonplace for all healthcare professionals as part of standard or universal infection control precautions in order to 'reduce the risk of transmitting infectious agents from both recognised and unrecognised sources of infection.'<sup>2</sup> This begs the question as to why we are continuing to use surgical masks in an environment where they are clearly ineffective, as they offer no protection against aerosols. Is it time we include FFP3 masks or similar PPE as part of our standard PPE as we are so reliant on AGPs?

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## Reducing transmission in a dental setting

Sir, whilst we wait for a vaccine to control the spread of COVID-19 we need to be thinking about ways to reduce risk of transmission. Two strategies could be part of the solution, albeit yet to be developed into a recognised protocol: sorting patients and saliva testing.

Sorting patients free of COVID-19 from those who carry the disease, so that the majority of patients can safely return for

dental treatment, might involve telephone triage to assess the risk before offering low risk patients an appointment. Low risk patients would then be tested in the dental setting to confirm that they do not have the virus. An agreed standard infection control protocol could subsequently be adopted without the need for a full-face respirator.

The development of a suitable rapid saliva test is desirable but a finger prick test might also be acceptable. Training would be required which could additionally allow the dental team to be further integrated into the management of COVID disease. For example, dental surgeries could provide convenient sites around the country where any patient could access testing as part of the anticipated testing and contact tracing protocols required until mass vaccination can be completed. Vaccination is another activity which the dental team might be able to support as well as generating an income stream for the dental surgeries involved. The GDC could facilitate the strategy by recognising COVID testing as part of the practice of dentistry, thereby allowing the existing indemnity arrangements to cover the dental team for the procedure.

The oropharynx and nasopharynx are targeted by the novel coronavirus with the result that saliva contains a high viral load of COVID-19 with up to  $1.2 \times 10^8$  infective copies/ml.<sup>1</sup> A recent paper has suggested that the use of Povidone-iodine (PVP) in a nasal spray and mouthwash might reduce cross infection and protect healthcare workers. This cheap and readily available substance in the form of 10% PVP (eg Videne)<sup>1</sup> can be purchased from Amazon and elsewhere and diluted one part to 20 to be used as a mouthwash and gargle by both the patient and the clinical team. An aerosol should also be sprayed into the nostrils of the patient prior to face to face contact.

The dental team can repeat the nasal spray during extended treatment sessions. Iodine is a particularly effective disinfectant when deployed against coronaviruses. Clinical studies have yet to prove the efficacy of the protocol – but with almost no risk and low cost, why wouldn't you want to use the approach on all dental patients?

PVP is currently used in ophthalmic surgery (often diluted to 5%) and occasionally during oral surgery at 10%. Anecdotally we hear that some UDC centres have already adopted the use of PVP off-label, whilst waiting for clinical

trials to prove the efficacy. For those who would like to see the technique demonstrated a video is available online (<https://vimeo.com/406479300>).

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## Povidone iodine

Sir, dentists and their assistants as front-line healthcare workers (HCW) in close contact with the upper aerodigestive tract are at especial risk of transmission of the coronavirus from patients. In early infection, viral titres of greater than  $10^7$ /mL in saliva and nasal mucous can be found and thus any work within the oral cavity carries an increased risk.<sup>1</sup> Even a few microlitres of saliva contamination of surfaces or instruments may carry many thousands of infectious viral particles. A significant proportion of COVID-19 sufferers are asymptomatic, but shedding these viral particles.

We have been examining the potential role of povidone iodine (PVP-I) in the reduction of the risk of cross infection and protection of dentists and other HCW from COVID-19 and have drafted a paper summarising the evidence.<sup>2</sup>

PVP-I has a better anti-viral activity than other antiseptics such as chlorhexidine,<sup>3</sup> and has already been proven to be an effective virucide *in vitro* against similar coronaviruses (SARS-CoV and MERS-CoV)<sup>4</sup> although it has not been tested directly with COVID-19. PVP-I has been shown to be a safe therapy when used as a mouthwash or taken nasally. We propose that a protocolised nasal spray and oropharyngeal wash of PVP-I should be used in the current COVID-19 pandemic to limit the spread of SARS-CoV-2 from patients to healthcare workers and potentially *vice versa*. We propose that no dental patient should be examined before disinfection by PVP-I. The reduction in coronavirus titres is over 99.99% *in vitro*<sup>3</sup> and we estimate the reduction to last for at least 20 minutes *in vivo*. The exact length of time is being researched, but should be sufficient for examination and short procedures.

Elsewhere we describe similar protocols for treating known COVID-19+ patients and the HCW looking after them.<sup>2</sup> The total iodine exposure proposed is well within previously recorded safe limits in those without contraindications to its use (history of allergy to PVP, thyroid disease etc). The intervention is inexpensive, easy and easily deployed at scale. The methodology proposed is as follows:

Step 1 – A 0.5% PVP-I solution (standard aqueous PVP-I antiseptic solution diluted 1:20 with water) is administered in a dose of 0.3 ml into each nostril, preferably using an atomising device (two sprays for average device) or if not from a syringe.

Step 2 – 9 ml of the 0.5% solution is then introduced into the oral cavity and used as a mouthwash. Distribute throughout the oral cavity for 30 seconds and then gently gargle at the back of the throat for another 30 seconds before spitting out.

We propose the use of PVP-I applied as per this method for all patients requiring dental treatment during the current COVID-19 pandemic, just prior to treatment. To enhance protection, the operating dental surgeon and assistant should both consider self-administering to the same protocol every 2-3 hours while treating patients during the pandemic, up to four times a day, as an adjunct to currently recommended PPE. The application of PVP-I mouthwash and nasal spray in this way should reduce the cross-infection risk and therefore help to protect dentists. The American Dental Association have very recently published interim guidelines for minimising the risk of COVID-19 transmission which includes the use of a pre-operative 0.2% povidone mouthwash.<sup>5</sup>

A more comprehensive summary of the available evidence, safety data and exclusion criteria are available and we would recommend that this is read before using this protocol.<sup>2</sup>

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## Mental health disorders

Sir, I wrote to you in 2019 about the impact of mental health disorders amongst dental patients.<sup>1</sup> With the World Health Organisation (WHO) declaring the current Public Health Emergency, COVID-19, it is just as important as ever to also recognise and manage the mental wellbeing of professionals in healthcare.<sup>2</sup> Such an unprecedented situation is understandably likely to trigger feelings of stress and anxiety.

Concerns over physical health, uncertainty over redeployment, and training and employment insecurities are just a few of the many difficulties that members of the dental and medical community are facing. Healthcare professionals are also challenged to find a balance between managing their own physical and mental health, and that of the patients they are treating.<sup>3</sup>

The WHO recognises the importance of healthcare workers employing positive coping strategies,<sup>2</sup> whilst Public Health England guidance also outlines safe working recommendations, advising staff to regularly take breaks.<sup>4</sup>

The current level of mental health and emotional support available for National Health Service (NHS) staff, as they tackle the COVID-19 pandemic, seems to be on the rise. The NHS has launched a 'mental health hotline' for its staff,<sup>5</sup> and there are also a number of free digital apps available to NHS workers until December 2020. These form part of the extensive support measures being put in place to deal with the consequences of COVID-19.

Whilst such resources are deeply valued during the ongoing crisis, my concern is how much support will be available to deal with the longer-term impacts of this pandemic? With all non-urgent elective care currently suspended, there will undoubtedly be increased pressure on the workload for professionals after COVID-19. We therefore need to consider the future consequences of

this event for NHS staff, to ensure that we have a healthy workforce, both physically and mentally.<sup>3</sup> This preparation will ensure high standards of patient care can be continued.

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## USC referrals

Sir, we write to draw attention to the impact that the lockdown associated with COVID-19 is having on mouth cancer USC referrals. Here at the University Dental Hospital in Cardiff, which serves a population of approximately 480,000, the mean number of USC referrals received per week has been 11 with a range, over the six months prior to 23 March 2020, of between seven and 18 referrals per week. These USC referrals come from both general dental and general medical practitioners working in primary care of Cardiff & Vale University Health Board. However, since the introduction of lockdown and clinical restrictions on 23 March 2020, the number of referrals per week has fallen in consecutive weeks from 11 to three, then to one with no USC referral in the week beginning 6 April 2020. Only two USC referrals have been received in the last two weeks. The University Dental Hospital is running an emergency dental service every day and no patient has presented with mouth cancer via this route since 23 March. There will undoubtedly be an adverse impact on patients who may present after lockdown restrictions with tumours at an advanced stage that will require more complex treatment and ultimately have a poorer five-year survival.

It is important that the profession is aware that during this pandemic USC patients will