

Letters to the editor

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CORONAVIRUS

Three updates

Sir, I write with my thoughts on three recent items published in the *BDJ*,^{1,2,3} in relation to fit testing for FFP3 respirators,¹ an additional consideration is that the Occupational Safety and Health Administration have advised that prescription glasses, or where required safety goggles, must be worn during the fit test.⁴

The author cited reasons for undergoing a fit test, one of which was facial change since the previous test. It would be interesting to note that major dental work such as new dentures would fall under this category.

Secondly, in relation to thermal screening² the CDC in its guidelines for dental settings recommends that a patient should not be deferred treatment for the sole reason of being febrile ie a clinical correlation of the fever must be made.⁵ The same guidelines recommend that the definition of fever be updated to either a measured reading of $\geq 100.0^\circ\text{F}$ or subjective fever. If a patient is found to be febrile with a strongly associated diagnosis of dental origin such as the presence of intra-oral swelling and pulpal/periapical dental pain with the absence of symptoms suggestive of COVID-19, dental care may be provided following routine protocol.

Finally, in relation to orthodontic treatment³ this author mentions the use of self-etch primers (SEP) to avoid an AGP, however the technique of applying SEP involves gentle air drying according to some manufacturers, making it a potential AGP. There is also a mention of utilising light cured resin modified GIC, but this material does not require a dry field and in fact, the surface of the enamel should be moist during bonding to ensure success.⁶ The author suggests hand trimming of

excess composite/flash with a scalpel. An alternative to this would be to utilise either: band removing pliers (posterior teeth), hand scalers/Mitchell's trimmers (incisors) or adhesive removing pliers.⁶ Minimal remnants of residual material on the enamel surface can be lost with time as a result of toothbrushing.⁶

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Molecular iodine

Sir, we have read with great interest the correspondence of Challacombe *et al.* on the antiseptic efficacy of povidone-iodine (PVP-I) against SARS-CoV-2; we aim to demonstrate the potential prophylactic capacity of the new generation of uncomplexed molecular iodine (I₂) mouthwashes.¹

PVP-I has been a gold standard antiseptic for decades with proven efficacy against the previously identified beta coronaviruses; it was one of the first candidates for the emergency trials attempting to establish an additional layer of protection for frontline healthcare

workers.² The mechanism of action of PVP-I relies primarily on the free iodine component, which is bound to a large polyvinylpyrrolidone molecule (PVP) acting as a carrier to deliver I₂ to target cells. However, the viricidal activity of PVP-I is highly associated with its I₂ content: the commonly used 10% PVP-I can only deliver 1–3 ppm of I₂ in a compound of more than 31,600 ppm of total iodine atoms. The high percentage of bounded 'non-active' iodine contributes to all the undesirable toxicological and staining properties of PVP-I.³

A new generation of iodine-based antiseptics 'super iodine' was initiated recently to overcome the compositional side effects of PVP-I. Therefore, ioTech International (Boca Raton, FL) produced a patented aqueous solution of I₂ that contains over 100 times more I₂ than PVP-I and comes in various forms ready for prophylactic use including mouthwash, nasal spray, and hand cleanser.⁴ Moreover, the non-bioactive iodine content was reduced from 31,600 ppm in PVP-I to several hundred in the new formula thus accelerating its effect, increasing its shelf-life, and minimising its potential irritancy and mucosal staining.

In comparison to several antiseptic mouthwashes, the new I₂ formulas showed higher viricidal efficacy against coronaviruses and took as short as 30 seconds to inactivate alpha coronaviruses (229E) completely.⁴ The same was observed in Rhinovirus which was totally inactivated above the cytotoxicity level after exposure to the new I₂ formula for 30 seconds.⁴

To the best of our knowledge, there is an ongoing randomised control trial at St. Joseph's Hospital University (Paterson, NJ) to evaluate the efficacy of I₂ mouthwashes and nasal sprays in protecting frontline healthcare workers by reducing their susceptibility of getting infected by SARS-CoV-2. Therefore,

we suggest more controlled trials to be initiated using I₂ products to benefit from their potential superiority over conventional PVP-I mouthwashes.

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Increased antibiotics use

Sir, pre-COVID, dentists were responsible for about 10% of all antibiotic prescribing worldwide.¹ At the onset of the pandemic most dental practices were restricted to giving advice, analgesia and antibiotics (AAA). Reduced access to dental care and an inability for dentists to provide dental procedures increases dental antibiotic prescribing.² A large increase in dental antibiotic use in England during April and May 2020 was widely anticipated and so we undertook a rapid analysis comparing antibiotic use across

NHS dentistry in England in 2018 and 2019.

The number of antibiotics dispensed each month by community pharmacists in England relating to NHS dental prescription forms from January 2018 to May 2020 is given in Figure 1.³ This shows antibiotic use in May 2020 was a clear outlier compared to the previous 28 months being 18.4% higher than in May 2019 (n = 267,719 and 226,188 respectively).

Interestingly, antibiotic use in April 2020 was slightly higher than the previous April but still within the normal range for the period of study. This is despite the significantly poorer access to dentistry (only around 7,500 patients were seen at designated urgent dental centres [UDCs] across England) compared to May when the capacity of these centres increased and saw over 27,000 patients.⁴

A range of non-clinical factors are known to be associated with dentists' decision-making about antibiotics prescription for acute conditions.² Antibiotics may have been used:

- As a 'quick fix' to avoid the life-time impact of an unnecessary extraction, in anticipation that AGPs might soon be permissible in general dental practices
- Because dentists felt pressured by some patients for antibiotics, irrespective of their efficacy or appropriateness for treating toothache
- Because of difficulties diagnosing a patient's condition remotely prompting a 'just in case' approach through concerns of life-threatening deterioration without treatment

- As some UDCs were requiring patients to have tried antibiotics before accepting referral for face-to-face care, highlighting system and process impact on antibiotic prescribing.

Finally, the NHS may have seen an influx in patients who might otherwise receive care privately, resulting in an increase in NHS dental prescriptions as, anecdotally, not all practices were open for telephone triage during April and May 2020. Examination of figures for the remainder of 2020 will reveal any enduring impact that COVID interventions may have on dental antibiotic prescribing and in identifying optimisation of future dental antibiotic stewardship.

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<https://doi.org/10.1038/s41415-020-2128-z>

Screening figures

Sir, the pre-visit triage, which practices are advised to do, will preclude any proven or probable COVID-19 patients from attending a practice, leaving only the possible, undiagnosed cases as posing a risk of bringing this infection into a practice. Our city council produces weekly updates of new cases, which gives a good indication of the level of infection in the population which our practice serves. When this figure is combined with the average number of patients that we have seen each week, since lockdown was eased, and the local population, this enables us to quantify the risk of us seeing an undiagnosed COVID-19 patient in the practice. Last week, this indicated that the average risk of seeing such a patient was one every 1,066 weeks, or one every 22.2 years. There are plenty of generalisations used in that calculation but it is certainly food for thought.

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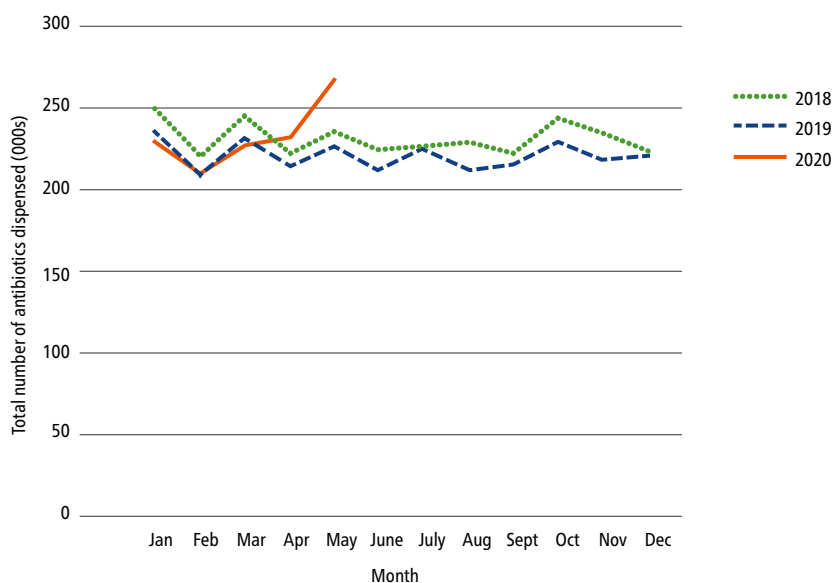


Fig. 1 Monthly antibiotic use by NHS dentists from 2018–2020