



# Protection of dental teams and patients in the COVID-19 era

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## Article info.

Received: 7 June 2020

Accepted: 18 June 2020

Volume: 10, Issue-2 ; October 2020

DOI: <https://doi.org/10.3329/updcj.v10i2.50171>



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Publisher: Update Dental College, Dhaka, Bangladesh

Web: [www.updatedentalcollege.edu.bd](http://www.updatedentalcollege.edu.bd)

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Coronavirus Disease 2019 (COVID-19), an airborne transmissible disease caused by the SARS-CoV-2 virus with an incubation period of about 2-14 days, can remain as air droplets and aerosols<sup>1</sup>, or transmitted as conjunctival, nasal, or oral mucosa, via coughing, sneezing, talking and saliva<sup>2,3</sup>, aerosols<sup>4</sup>, or even contact with eyes<sup>5</sup>. These may be important factors to consider where there is close face-to-face contact between a doctor/dentist and a patient. Medical staff and practitioners in contact with an infected patient that may be asymptomatic but infectious nonetheless<sup>6</sup>, may be at a risk of contracting COVID-19. In fact, healthcare workers (HCWs) are being directly impacted. One of the risks and concerns is that HCWs, including dental health care personnel (DHCP), may themselves transmit the virus to other HCWs, DHCP, patients or members of the public.

Drawing on available literature and published advice, this letter attempts to succinctly highlight necessary preventive strategies<sup>2</sup> and key infection control and prevention precautions required for DHCP, including dentists and oral hygienists, their practices, and their patients, during this pandemic, generally, and beyond. Peng et al.<sup>7</sup> draw attention to three aspects: 1) the use and type of personal protective equipment (PPE) by DHCP; 2) sanitary conditions of operating or treatment rooms and equipment; 3) triage, screening and risk assessment of patients during the time of the COVID-19 pandemic. COVID-19 has a higher transmissibility than Severe Acute Respiratory Syndrome (SARS)<sup>8</sup>, so it is useful, prior to initial physical contact with a patient, to employ teledentistry or remote screening via mobile phones to screen and ascertain the dental-related problems, and to determine if a patient displays any COVID-19-related symptoms such as fever, coughing, sore throat, or shortness of breath, i.e., patient evaluation and cohorting<sup>7,9</sup>. To reduce risks to DHCP, patients and the public, non-emergency dental-related problems and elective procedures could be delayed until the pandemic has died down, fortified by official lockdowns to ensure social distancing, which may also impact DHCP financially. Extra-oral radiographs (e.g., panoramic radiographs or cone beam CT) should be used to avoid salivation and coughing that may be induced by intraoral techniques<sup>10</sup>.

As one PPE, face masks (for the general public) and surgical masks (for doctors and DHCP) are at the frontline of the battle against COVID-19, serving as a physical shield – fortified by the use of a face shield – that offer one line of protection to both practitioners and patients<sup>9</sup>, although different makers and designs will show different efficacies as a function of their material, porosity, tight-fittingness, thickness, and other parameters<sup>11</sup>. COVID-19 can survive on different



## Citation

Jaime A. Teixeira da Silva, Aceil Al-Khatib. Protection of dental teams and patients in the COVID-19 era. UpDCJ 2020;10(2):1-2

DOI: <https://doi.org/10.3329/updcj.v10i2.50171>

inanimate surfaces (i.e., fomites) for different periods of time, including paper, plastic, wood, glass and steel<sup>12</sup>, materials that are used by DHCP in dentistry practices in the form of equipment and utensils. Commercial or hospital-grade disinfectants can effectively kill COVID-19<sup>9</sup>.

Peng et al.<sup>7</sup> also recommend the following precautions and actions, although none of them appear to have been clinically tested for their effectiveness with COVID-19: 1) rinsing the mouth before a dental procedure, and where chlorhexidine might not be effective, “1% hydrogen peroxide or 0.2% povidone is recommended, for the purpose of reducing the salivary load of oral microbes, including potential 2019-nCoV carriage” (p. 4); 2) use of a rubber dam to “minimize the production of saliva- and blood-contaminated aerosol or spatter” (p. 4); 3) use of an anti-retraction high-speed dental hand-piece to reduce the backflow of oral bacteria and to prevent the cross-contamination of air and water tubes; 4) effective management (pretreatment, cleansing, sterilization, and storage) of medical waste. Meng et al.<sup>10</sup> also point out the importance of dental education as a long-term preventive action. This should always take place within continuous and strict ethical guidelines. Strict governmental policies will allow dental associations to manage COVID-19 infection in oral diagnosis and treatment<sup>13</sup>, so compliance with policies and the practice of universal infection control measures should minimize transmission of SARS-CoV-2 in the dental environment. During the COVID-19 pandemic, it is important to increase awareness of COVID-19 transmission routes and preventative measures that are in place, as this will address the concerns of dental patients who might hesitate to seek urgent dental treatments out of fear of contracting the virus, taking it home, or spreading the disease.

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